Periodical

The AMERICAN RIFLEMAN

The Rifle 1885, Shooting & Fishing 1888, Arms & the Man 1906

VOLUME LXXIII NRA NUMBER 13

DECEMBER 1, 1925

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Henry N. Marsh

Determining the Remaining Velocity
Edgar Bugless-Wallace H. Coxe

$3.00 the year

20 cents the copy

The remarkable picture shown above is of nine pointer puppies which were born April 1st this year. The picture was taken July 1st. It was furnished through the courtesy of the owner of the puppies Mr. Goodwin Trent. Trent Ranch. San Marcos. California.

Nine Point(er)s in Favor of

DU PONT

Smokeless Shotgun Powders

POINTER NO. 1—Du Pont Powders are recognized everywhere as the finest powders made. They cost no more than other powders.

POINTER NO. 2—The most popular load in any shell contains du Pont Powders. Ask any shell manufacturer what powder his most popular load contains.

POINTER NO. 3—One hundred and twenty-three years of uninterrupted success has made du Pont Powders the standard by which others are judged.

POINTER NO. 4—Du Pont Smokeless Shotgun Powder has a distinct individuality. It is unlike any other bulk powder. It is hard grained, does not corrode, has less breech pressure and gives better pattern, is good in any shell and keeps indefinitely.

POINTER NO. 5—Du Pont Smokeless Shotgun Powder gives less variation in velocity and pattern than any other smokeless powder.

POINTER NO. 6—Du Pont Smokeless Shotgun Powder has won more championships than all others combined. "Du Pont makes and breaks records."

POINTER NO. 7—Du Pont Oval Shotgun Powder gives best results with heavy loads. It carries 1¼ ounces of shot at the same velocity that any other powder carries 1⅛ ounces of shot. It is loaded only in maximum loads by all loading companies, for big feathered game.

POINTER NO. 8—Du Pont Oval gives the same pressure with 11% more shot or 11% less pressure with the same amount of shot. It also gives 40% to 50% improvement in stringing of shot.

POINTER NO. 9—Du Pont Oval has started the shooting world to talking. It is the first powder that has been produced where the improvement in velocity is so great that it can be noticed by the man doing the shooting.

E. I. du Pont de Nemours & Company, Inc.

Sporting Powder Division

Wilmington, Delaware

SHOOT DU PONT POWDERS

Tackhole outclasses them all at 300 yds!

Peekskill Peters TACK HOLE

That eminent shooter L. J. Corsa wrote his name all over the Peekskill shoot and burnt the Ⓟ brand deeply into the minds of every observer at the New York State Rifle Association Matches, winning the Empire State Small Bore Championship with a score of 557: the 100-yard (metallic sights) 176 x 200: the 300-yard (metallic sights) 87 x 100: and the 300-yard (any sight) 91 x 100. In the 300-yard match W. E. Trull, using Ⓟ brand took second, with 90 x 100.

Ⓟ Tackhole demonstrated its championship stuff under the worst possible conditions—a 3-day nor'west gale, with a 60-mile wind veering from right to left front and a temperature from 35 to 50 degrees. Elevations were way above normal. However Ⓟ Tackhole proved itself again the best "wind-jammer" in the small bore field and showed it can lick its weight in copper, powder and bullet any time under the most difficult conditions. Tackhole has that extra edge of shooting quality that makes it possible for users to do just much better shooting.

Corsa did a little practice shooting between events at the New York State shoot. He hung up the following score out of an aggregate of 450 points:

50 yds.—100, 100
100 yds.—100
200 yds.—49, 50, 50

Some shootin'! Marvelous! But part of the credit must go to Peters technical staff which is responsible for placing in shooters' hands this super-accurate, absolutely uniform ammunition. All Ⓟ cartridges are loaded to uniform standards and therefore give unusually uniform results.

There is a Peters cartridge for every rifle, pistol and revolver, and a Peters Shot shell load for every requirement. Use them—for better shooting!

THE PETERS CARTRIDGE COMPANY

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CINCINNATI NEW YORK LOS ANGELES

PETERS AMMUNITION

WINCHESTER

75-PRECISION-200

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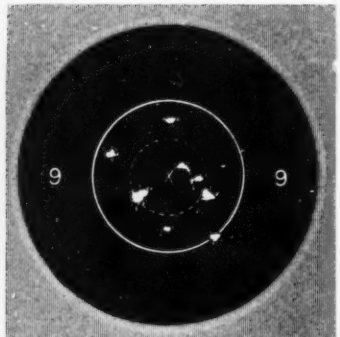
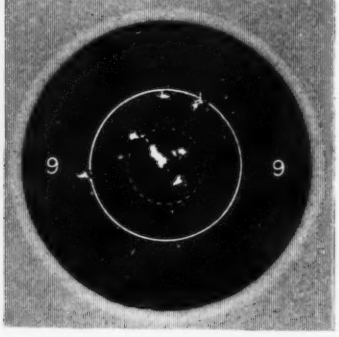
—Precision





J. E. Miller and his perfect targets

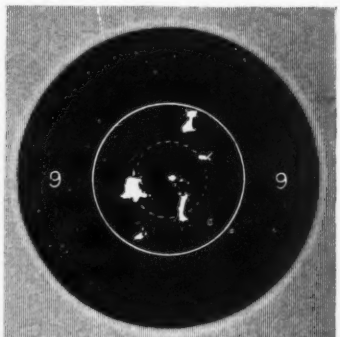
The National Matches reflect the attitude of small bore rifle shooters as to the arm and ammunition that is the most popular and dependable. The most popular and dependable ammunition at Camp Perry last September was Winchester Precision. Shooters using it in individual matches, of which there were 11, won five championships and tied for first in four others. The high man and five of the first seven on the DeWar team used Winchester Precision. Can we offer any better testimony of its popularity or dependability than this?

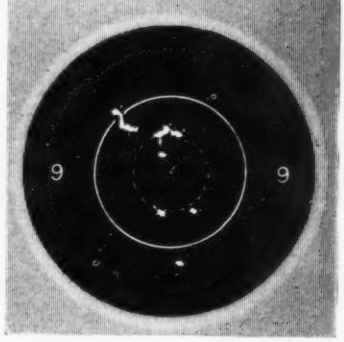
Outstanding performances at Camp Perry with Precision were achieved by Virgil Richard of Pennsylvania and J. E. Miller of Ohio whose likenesses appear in this advertisement. Richard won the short range championship and tied for first place in the 50 and 100 yards metallic sight matches. His two targets for the latter are shown to the right. He was second in the Grand Aggregate and tied for second in the N. R. A. Individual Championship, in each instance being scored one less point than the winner, was high in the three tryouts for the DeWar team, placed sixth in the International Match and was on the Championship Eastern and Pennsylvania teams.

Miller's shooting, too, was remarkable. He won the Grand Aggregate, the long range championship, the 100-yard any sight match, targets of which are shown at the left, was fourth high on the International team and was also on the Eastern team.

Superior ammunition such as Precision is used by the champions because it can always be depended upon. Use it in your matches this winter.

Winchester Repeating Arms Co.
New Haven, Conn.





Virgil Richard and his excellent targets

WINCHESTER

The AMERICAN RIFLEMAN

The Publication of the National Rifle Association of America

Entered as second-class matter, April 1, 1908, at the Postoffice at Washington, D. C., under Act of Congress of March 3, 1879

Vol LXXIII, No. 13 WASHINGTON, D. C., DECEMBER 1, 1925 $3.00 a Year. 20 Cents a Copy

"What's in a Name?"

By C. B. Lister

A NAME is a peculiar proposition. Some names are objects of derision wherever mentioned; some are revered; some will arouse men to the highest point of enthusiasm and demonstration. The mention of one name will open the doors to financial power capable of building empires, and other names represent powers which have wrecked nations. But, with all the powers that some names possess, with the accomplishments that some names represent, the *name* itself is nothing. The value of a name is in direct proportion to the amount of service that the individual or thing bearing the name has rendered mankind.

What about the name that this Association bears—this National Rifle Association of America? The power for good inherent in that name, the possibilities of accomplishment, are bound to be in direct proportion to the amount of service that the organization renders America.

Not so long ago the very name itself was a misnomer to those who had the courage to face the facts. The membership was so limited that the entire group might have been gathered in one country hamlet. The one thing that saved the situation was that there are so many other organizations masquerading under the title of "National" that no one particularly noticed the small riflemen's organization that was trying to reawaken in America its old-time interest in the rifled tube. And it was true that *this* Association was attempting to do a work which was of national necessity and had been recognized by the national Congress as an important agent in the national defense.

Today, however, there is a different complexion to the matter. The membership can no longer be crowded into a country hamlet. Individual members and affiliated clubs extend from the Atlantic to the Pacific and from the Canal Zone to Alaska. The membership is drawn from all walks of life, from laborers to millionaires, from artists to mechanical engineers, but they all have one heritage in common—they are citizens of the United States of America vouched for and recommended by other citizens.

The Association has, then, finally taken on a truly national aspect, but the coverage is all too sparse,—twenty-two thousand individual annual members, fifteen hundred individual life members, and affiliated clubs with a membership bringing the total up to one hundred thousand or more—a showing creditable enough to avoid derision when the name "National Rifle Association" is mentioned, but too thinly spread over the nation.

Turn to the other side of the picture. How many people in the United States do more or less shooting? We are told that eight million hunting licenses were issued last year. It is perfectly true that most of these licenses were issued for hunting with the shotgun, but if we estimate that at least one man in every eight who goes afield with the shotgun also uses a rifle, either for game shooting or for his own amusement, we have left a total of one million marksmen—approximately ten times as many lovers of the out-of-doors as now constitute the National Rifle Association, a fact which gives rise to the thought "How national *is* the National Rifle Association?" This brings us face to face with the fact that no organization can be truly national in influence, scope and benefits which exists in only one place. It is true enough that the headquarters of the National Rifle Association are in the nation's capital, but these few officers and these few men are the headquarters organization only. The National Rifle Association is the hundred thousand odd who are sprinkled over the face of the map wherever Old Glory unfurls. The problem of whether we are to have a national association in fact as well as in name rests on the shoulders of these men on the firing line. To expect each of them to go out and find his pro-rata share of nine additional shooters, which would be required to bring the Association up to a membership of one million, might be asking a good deal, although there have been many men who have endorsed the applications of four times that many. To ask each of the present members to interest, endorse and enroll *one* additional member is, however, certainly not asking or expecting too much, and if during the coming year every present member will enroll at least one additional member, and if next year this job is repeated, the task of enrolling the million who have already indicated that they are interested by taking out hunting licenses, would be accomplished in three years!

Considered from this angle, the task of making the National Rifle Association a truly national organization with a name that would be respected everywhere and would be capable of infinite good, loses its "almost hopeless" appearance and becomes a thing that can really be accomplished without a great deal of exertion on any one's part. A thing, furthermore, that can be accomplished in such a length of time as to enable those who have built up the organization to enjoy to the full the benefits of their work.

"The National Rifle Association"—what possibilities there are in that name! What will you do during the coming year to help bring it to the point of respectful attention that it should occupy in America, the land which was once proud to boast the title, a title that today is a "name" only, "A Nation of Riflemen"?

The Bull's-Eye Pistol

By Major J. S. Hatcher

RECENTLY an acquaintance of mine called at a friend's house to play cards. During the course of the game he was thoughtfully contemplating the cards held in his right hand, while between the fingers of his left hand which rested on the table, a half-burned cigarette was smouldering. Suddenly out of the corner of his eye he seemed to catch a flash of light on the end of his cigarette.

He raised it quickly and looked at it, and it was out. Mechanically he re-lighted it, took a puff or two, and started to examine his cards again. This time there was no mistake whatever about it. The fire suddenly jumped off his cigarette and fell on the table. Most extraordinary!

He took out another cigarette and started to light it, but about this time he became conscious of what appeared to be suppressed laughter on the other side of the room, and glancing up he saw his host trying his best to wipe a guilty smile off his face.

Evidently they were trying to play some trick on him,—but what? Just how could a fellow put out his cigarette ten feet away? He decided to play a waiting game and solve this mystery by observation, so he quietly slipped his cigarette case back into his pocket without lighting a cigarette, and kept his eyes covertly on his host.

In a few moments another member of the party let his hand drop to his side holding a cigarette. At the same moment our friend observed his host in the act of slowly raising a deadly looking automatic pistol and apparently aiming at the cigarette. There was no sound, but the fire dropped off the cigarette, and at the same moment he saw a small bird-shot roll on the floor.

Just at this point he was further than ever from the solution of the mystery, but without a doubt there are a number of our readers who could help him out with a very little trouble, for those members of the N. R. A. who visited Captain Brown in his Bull's-Eye Pistol Booth at Camp Perry this summer would hold the key to the enigma.

For the benefit of those readers who were not at Camp Perry, I will try to describe this remarkable weapon. There are many inventions that cause you to say when you look at them, "How simple that is. Why didn't I think of it myself?" There are others which call forth the remark, "Well, how in the world do you suppose he ever happened to think of such a thing as that?"

The Bull's-Eye Pistol is definitely of the latter class. It is so different from anything else, and so very cleverly worked out, that it leads to the belief that the inventor must have been very ingenious.

The Bull's-Eye Pistol is the invention of a doctor out in Wyoming who started out to get up a pistol suitable for shooting flies, and who succeeded remarkably well in his object. The projectile is No. 6 Chilled Shot, and the ammunition is entirely "smokeless." The propellant is ahead of the best ideals that the designers of smokeless powder have been looking for, because it is entirely noiseless, flashless and non-hygroscopic.

However, it is feared that the Army will not adopt the good doctor's idea of propellant, for while it is wonderfully well adapted to propel No. 6 Chilled Shot, it would hardly work out on 75 mm. Shell. In fact the propellant is nothing more nor less than a No. 33 rubber band.

The Bull's-Eye Pistol is a device shaped very much like the Colt Automatic .22. It is made of sheet iron, stamped and soldered together into the shape of a pistol. What corresponds to the barrel of an ordinary pistol, is really a guide-way for a moving carrier, which when drawn to the rear is held in place by a catch. Pulling the trigger allows the carrier to move forward under the tension of a rubber band.

Inside the top of the barrel the metal is folded so as to make a sort of tube with a slot at the top. This tube is the magazine. It is closed at the front end by a little piece, which also serves as the front sight, Patridge style.

A little funnel is furnished with the outfit, and to load the pistol the front sight is removed and the magazine poured full of shot with the assistance of the funnel, after which the front sight is replaced, retaining the shot in the magazine.

The magazine holds about fifty-eight shot, and the number in it can be seen through the groove in the top.

The catch that holds the carrier is so arranged that each time it is depressed, it allows one shot to drop out of the rear end of the magazine. The loading of the pistol is thus accomplished automatically, for when the carrier is drawn to the rear, it depresses the catch in passing over it, and at the same time a shot drops down. The shot falls into a little pocket in the bottom of the carrier. At the rear of this pocket is an inclined groove which leads up to the center of the carrier.

When the trigger is released, the carrier suddenly starts forward and the shot rolls up this groove until it is in the very center of the carrier and it stays there during the carrier's forward motion. When the carrier stops, the shot continues.

The really surprising thing about this little pistol is the extreme degree of accuracy that it gives. There is a rear sight adjustable up and down, and from side to side, and both front and rear sights are of the square Patridge type.

At ten feet it is possible to group all of the shots in a quarter-inch circle, and at six feet Captain Brown demonstrates the ability of the pistol by shooting at one of the No. 6 Shot. This was a very small target indeed, but he was able to hit it about two times out of three.

At Camp Perry there was a sign in front of the Bull's-Eye Pistol Tent giving the rules and regulations for the Bull's-Eye Match "Target—Standard American House Fly."

The pistol comes packed in a pasteboard box with the loading funnel, an envelope of shot, some extra rubber bands, and three celluloid birds of the ten-cent store variety. There are also three little wire perches for the birds, which go in the front of the box, and on the back of the box is the place to hold paper targets.

The outfit includes a stamp pad and a rubber stamp for printing your own targets, one-quarter-inch bull's-eye, suitable for use at from eight to ten feet distance.

While this outfit is primarily a toy, really it is one of the most excellent devices for teaching marksmanship that I have ever seen. There is a fascination about knocking down the little celluloid birds that makes the pistol very popular with all members of the household, especially the younger ones. Generally when they first start to use it they are unable to hit the birds except for a small percentage of the shots. But as there is no noise, no recoil and no disturbance of any kind in shooting, there is naturally no tendency to flinch, and soon even the most careless person will learn to line up the sights correctly and pull the trigger without any jerk, so that the score on celluloid birds at ten feet very quickly reaches one hundred per cent.

For years my three youngsters have been going out with me to shoot .22 pistols. One of them is very good, but the other two never were very strong on marksmanship. However, during the two weeks since they have been playing with the Bull's-Eye Pistol, they have improved so much in marksmanship that when I took them out a day or two ago with the real pistol, they all made excellent scores.

While this pistol is fatal to a fly, it is really harmless to anything larger. When the shots strike you on the skin they sting slightly, and it is conceivable that if they should strike one in the eye, they might cause real inconvenience, but even at that it is not believed that they would be able to put out the eye.

The force of the shot is just sufficient to pierce a sheet of ordinary letter head paper at ten feet, but will not break a window-glass; nor will it pierce pasteboard or stiff paper.

The strength of the pistol is adjustable, however, to suit various needs, for by putting on two rubber bands it will shoot twice as hard, and if it is to be given to very young children to play with without supervision, the strength of the shot can be cut down to where it is really harmless by using only half of a rubber band, or by using a smaller rubber band which would be weaker.

Manufacture of Small Bore Cartridges

By H. W. Starkweather

VERY few users of ammunition have ever been in an ammunition plant, and, knowing the interest in ballistics shown by such few as we have met, we thought there might be some interest among the users of the .22 in the methods of manufacture and the problems involved in turning out ammunition which will stay well within the necessary accuracy requirements of the various ranges.

To begin with, as every shooter knows, the quality of present-day small-bore ammunition as well as all other ammunition has advanced very much over that of previous years.

There are many reasons for this and it is hard to say which one is most responsible. Competition between the manufacturers to turn out the very best quality of ammunition; the improvement in arms, resulting in the loss of the alibi for a poorly shooting arm; the use of the small bore as a training arm for the service rifle; and, last but not least, the demands of the shooting public; are all factors entering into the marked improvement of recent years.

The performance required of a .22 caliber long rifle cartridge today is very much more severe than that of a few years ago, when practically all of the shooting was indoors—most of this at fifty and seventy-five feet. Now, many matches are shot at fifty, one hundred, and two hundred and even three hundred yards, and errors in accuracy at these distances are very much greater than at fifty and seventy-five feet. This of course is old stuff to the shooters and we simply mention it because it is a large factor in the development of the .22 long rifle cartridge, and the lessons learned from the .22 long rifle have resulted in improvement in all .22 caliber cartridges.

The .22 long rifle cartridge consists of the following components: the shell or case, the priming mixture, the powder, the bullet and the lubricant.

The shell itself is made of gilding metal, which is a high copper metal, consisting usually of between ninety and ninety-five parts copper and the balance zinc. This is a form of brass.

The requirements of the shell are as follows: The shell must be hard enough so that it will not stick in the chamber of the gun and interfere with extraction. The rim must be well shaped and have sufficient cavity of correct shape to properly hold the priming mixture, so that when struck by the firing-pin the priming mixture will be ignited. The temper of the rim must be right so that the firing-pin will give sufficient indent to set off the priming mixture and will not puncture or split.

The above requirements seem very simple, but when we consider the number of operations in the manufacture of rim fire cartridges and the quantity in which they are produced, they are not as simple as the layman might believe.

The priming mixture must be sufficiently sensitive to fire when struck the minimum blow attained in well constructed arms. In addition to this it must be of such composition that it will have sufficient flame and heat to properly ignite the powder, and must not develop sufficient pressure of itself to burst the rim of the shell.

Long rifle cartridges for accuracy work as a rule are not loaded with smokeless powder but are usually loaded with King's Semi-Smokeless or Lesmok powders.

The bullet must be made carefully to the proper weight and proper dimensions and of such a design that it will give the utmost accuracy when properly loaded into the cartridge. The design of the bullet refers not only to the shape and the weight but the composition of the bullet mixture, which must be such that it will not lead the barrel and should be just hard enough to give the proper results for accuracy.

The lubricant is another factor in the accuracy of these cartridges. It must retain the proper lubricating qualities and must neither harden nor decompose with age, nor must it soften too much under the temperatures encountered in storage and on the firing line.

Ballistically, the cartridge must be loaded to certain predetermined standards, having very little variation in velocity, and must stay well within safe pressures, as well as passing certain predetermined results for accuracy.

The details and methods of manufacture of all types of ammunition vary to a certain extent as between the different manufacturers. However, a general outline would be approximately as follows:

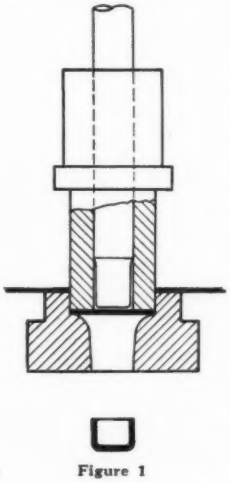


Figure 1

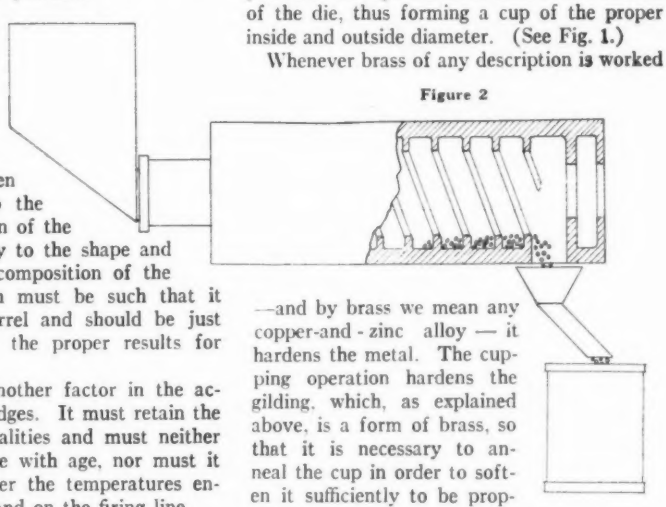
The shell or case is started from sheet metal of the proper composition, thickness and temper. The manufacture of this metal in itself has a very important part in the manufacture of the cartrige, because in order to obtain good results in the final operations it is necessary that this metal be free from flaws, uniform in thickness and temper and generally of the highest possible quality to be obtained.

The first operation performed on this sheet metal is the so-called cupping operation. This is done in a double-action press, a number of tools to the gang, so that at each stroke of the press a number of cups are formed.

Each set of tools consists of a blanking punch, which, as the term implies, cuts the blank from which the cup is made. This blank is carried into the die and then the drawing punch folds this into the form of a cup and pushes it through a smaller hole in the bottom of the die, thus forming a cup of the proper inside and outside diameter. (See Fig. 1.)

Whenever brass of any description is worked

Figure 2



—and by brass we mean any copper-and-zinc alloy — it hardens the metal. The cupping operation hardens the gilding, which, as explained above, is a form of brass, so that it is necessary to anneal the cup in order to soften it sufficiently to be properly drawn.

After the annealing operation it is necessary to wash the shells in order to take off the oxide which is deposited on the surface when going through the annealing furnaces.

We might explain here that the annealing is merely a heating operation, which heats the shells to predetermined temperatures best adapted to the metal being treated. This annealing is done in furnaces of a number of different kinds, varying with the different manufacturers.

Some of the types are as follows: The muffle type, which has a large chamber into which the shells may be put in trays; the rotary type (See Fig. 2), in which the shells are fed in at one end of the chamber, carried through the furnace by means of a spiral feed and discharged at the other end, thus giving a continuous operation. Still another type is what used to be called a peanut-roaster, which is more or less descriptive. This type has a cylindrical drum into which the shells are placed and which is rolled into a furnace and kept revolving at the proper heat and for a definite time, after which it is rolled off and the shells removed.

One interesting thing in connection with the annealing of brass is that brass does not harden like steel when dropped into water.

There is no apparent difference between shells which are allowed to cool slowly in the air and shells which are dropped into water, so far as the anneal is concerned. You will note that this is very different from steel, because in order to anneal steel it is necessary to heat it to the proper temperature and then cool it very slowly.

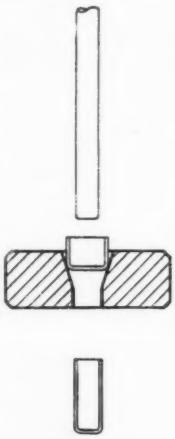


Figure 3

The final diameter of the rim-fire shell is obtained by so-called drawing operations (See Fig. 3), which consist of pushing the shell through a die by means of a punch and reducing not only the diameter but the thickness of the side wall. There may be one or several of these operations necessary in finishing a rim-fire shell, and it is customary to anneal before each drawing operation in order to get the shells sufficiently soft so that they may be properly drawn.

This operation is performed in various types of punch presses, with various types of feeds. However, the principle back of all of them is that the shells are fed, by some type of automatic or semi-automatic feed, under the punch and over the die. The punch then comes down into the shell, pushing the shell through the die, the drawn shell being stripped underneath the die, the punch returning, ready for another shell.

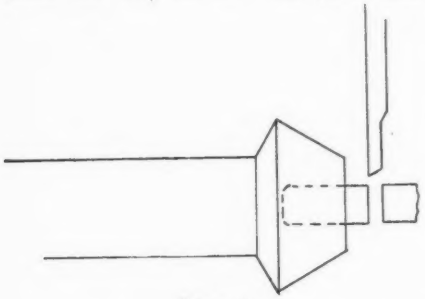


Figure 4

The design of the drawing tool is very important, as the distribution of the metal and the amount of work which is performed on it determine the temper of the finished shell, and also determine to a large extent the shape of the head.

Great accuracy is required in these drawing operations and for this reason a very careful inspection must be maintained on this as on all other operations.

After finish-drawing a rim-fire shell this is trimmed to the proper length for heading. A shell trimmer (See Fig. 4) is more or less standard in type and consists of means of feeding the shell into line with a revolving spindle similar to a lathe head, the shell then being picked up by a punch and carried into a chuck, which closes on the shell, holding it in position for the knife or tool which does the trimming operation.

After the trimming, the shells are taken to the headers, where the head is formed. The header consists (See Fig. 5), briefly, of a press, in which the shells are fed in front of a punch and carried down into a die, and a bunter or flattening tool, which comes in from the other side of the die, hits the closed end of the shell and forms this to the proper shape, this shape being controlled by the distribution and temper of the metal as this comes from the draw-press.

The shell is then ready to be primed. The priming consists of spinning the priming mixture into the cavity by means of revolving spindles, which carry the charge out into the cavity and compress it.

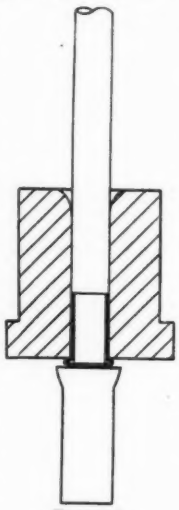


Figure 5

This finishes the manufacture of the empty primed shell. Many other operations than the essential ones enumerated are necessary, such as washing operations, drying operations, tumbling operations, careful inspection at various points, and various gauging operations.

The manufacture of the bullet, while somewhat simpler than the manufacture of the shell, is, however, of great importance. Very accurate shapes and weights must be maintained, as well as an accurate mixture. Briefly, the operations are as follows:

The bullet mixture is made up and either cast into slugs slightly over the weight of the finished bullet, or, as is done at Frankford Arsenal, lead wire is made from this mixture and this cut off to the proper weight for swedging.

Then these slugs, however formed, are put into a so-called swedging-press and the bullets are compressed into a die of the proper shape (See Fig. 6) by a bottom punch and top punch, so that the space into which they are compressed represents the volume of lead necessary to give the required weight.

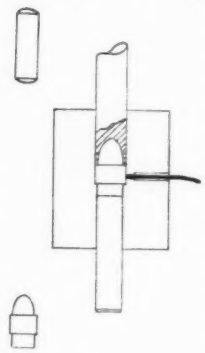


Figure 6

The excess lead is put into the slug because it is impossible to cut or cast slugs of the exact weight required in the finished bullet. The weight of the finished bullet is obtained in compressing these variable weight slugs into the die in the swedging operation because they are all compressed to the same volume, the excess lead being squeezed out of a hole in the side of the die. When the bullets are kicked out of the die this excess lead is sheared off, thus giving the proper weight bullet.

The swedged bullet is not always of the proper shape, and, of course, contains no grease grooves. In order to get the grease grooves into the bullet it is necessary that they be run over what is known as a caneluring machine (See Fig. 7). This machine usually consists of a revolving dial, upon which the swedged bullets are fed, which carries them between two circular pieces, the center one revolving and the outside one being merely a segment of a circle, these being of the proper shape to roll the bullet and form the lubricating grooves.

The shells and bullets are now ready to be loaded.

Loading presses are of many kinds. One of the older types and one which is still pretty generally used by many manufacturers, consists of a series of plates and the loading press. There is what is known as a charge plate (See Fig. 8-a), which has a large number of holes of the proper size to throw the required powder charge for the cartridge being loaded. Then there is a shell plate (See Fig. 8-b), into which the shells are shaken, and a bullet plate (See Fig. 9-a), into which the bullets are shaken.

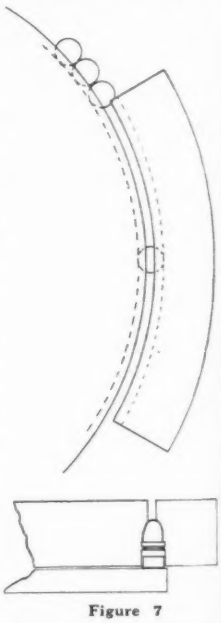


Figure 7

The first operation is to fill the holes in the charge plate (Fig. 8-a) with powder. While this is being done there is a slide plate under the charge plate which covers the bottom of the holes containing the various charges. The shells are shaken into the shell plate (Fig. 8-b) and at the same time the bullets are shaken into the bullet plate. The shell plate, containing the empty shells, is placed under the charge plate and the slide pulled, allowing the charges of powder to go from the charge plate into the shells. Needless to say, the holes of these two plates as well as the holes in the bullet plate are all in alignment.

Then the shell plate is removed from beneath the charge plate and the bullet plate placed on the top of the shell plate. The bullets are dropped into the shell plate by pulling a slide plate from under them in the same manner as is done in dropping the charge into the shell. Then the shells (9-b) and bullets (9-a), which are in proper alignment (the shells being charged with the proper amount of powder), are put into a press, which has a

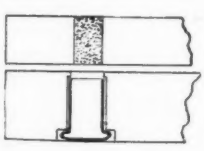


Figure 8

row of punches (9-c) lining up with the shells and bullets. This press is turned over and fed from row to row of cartridges, and when the press comes down it pushes the bullet home in the shell to the proper loading length.

We thus have the loaded cartridge, which, however has not been crimped. The crimping is done on a machine similar to the machine used for caneluring the bullets.

After crimping and before packing, the cartridges are lubricated by dipping into a lubricating bath, bullet end down. The cartridges are dipped into the lubricant only to the mouth of the shell, so that the lubricant is applied only to the bullet.

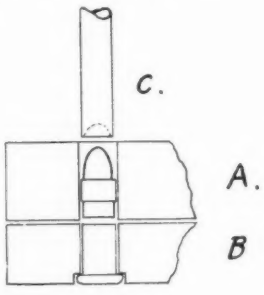


Figure 9

The loaded cartridges are now ready to be cleaned and packed, but before being packed and delivered to the warehouse it is necessary to make certain tests, which establish their quality. These tests are all very severe.

A few of the things covered which would appeal to the shooter are accuracy, pressure, velocity and functioning. By functioning we mean, of course, the proper feeding into the chamber of the arm and the proper extraction and ejection after firing.

The question naturally arises as to how we test for the above points, namely: accuracy, pressure, velocity and functioning.

The accuracy test is made at the distance or distances over which the cartridge is supposed to be shot and at which satisfactory accuracy or targets could be expected. In the case of the .22 long rifle indoor cartridges, tests are usually made at seventy-five feet. On the outdoor cartridges, tests are made at fifty, one hundred and two hundred yards. At times some testing has been done at three hundred yards. This is simply a matter of targeting usually ten shots to a group, and a record is made of the results obtained to determine whether or not the ammunition is up to satisfactory accuracy standards.

Pressures are taken in guns especially designed for this purpose. A brief description of this operation is as follows:

In the chamber of the gun, just forward of the mouth of the shell, a vertical hole is bored, perpendicular to the axis of the gun. Into this hole (See Fig. 10) is inserted a piston, which is practically the diameter of the hole, and beneath the piston is a small inverted cup, which is placed there to prevent the gas from getting by the piston. Above the head of this piston is placed a lead or copper cylinder of a certain diameter and length, this being held in place by a rigid support from above.

When the cartridge is fired the gas generated acts against this gas check or cup, which in turn forces the piston upward, thus compressing the lead or copper cylinder in proportion to the amount of pressure generated by the cartridge. The slug is then measured for length and this length shows the amount of compression or reduction in length as compared to the length before firing.

By reference to tables (called Tarage Tables) which show the corresponding pressure for this reduction in length, the chamber pressure can be determined. These tarage tables simply record the number of pounds per square inch required to reduce the length to different dimensions as shown by the tables. These are worked up by means of a compression machine in which the load is known.

Editor's Note—The accompanying article on the manufacture of .22 caliber ammunition is written by Mr. H. W. Starkweather, General Manager of the Peters Cartridge Company, Cincinnati, Ohio. The process of manufacture which he describes is that employed in the making of the famous Peters "Tackhole" cartridges loaded with King's Semi-Smokeless Powder.

While the pressures are shown in pounds per square inch because of the method of determining the tarage table, as a matter of fact the pressures are really not the number of pounds per square inch shown, because of the fact that the piston at the time the cartridge is fired is moving at a high rate of speed, while the compression obtained on the cylinder in working up the tarage table is done at a very slow rate of speed and represents practically a stationary load. This, however, does

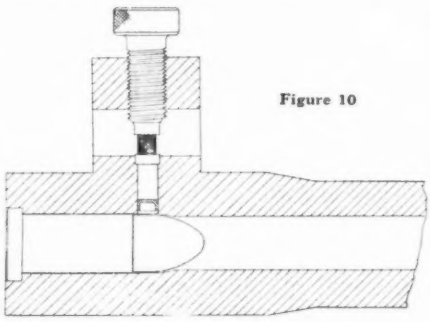


Figure 10

give comparative results and works out satisfactorily for all practical purposes.

Velocity is measured over various ranges, depending on the speed of the cartridge. The flight of the bullet from the muzzle of the gun to the target at the end of the range used gives the average velocity of the bullet over this particular range. From this average velocity the muzzle velocity is computed, and also the velocity at any other range on the trajectory of the bullet. In other words, if the average velocity over a fifty-foot range is known, the muzzle velocity can be computed and the velocity at fifty yards, one hundred yards, etc. To do this it is necessary, however, to know certain factors relating to air resistance of the bullet, etc., into which it is not the purpose of this article to go.

The methods of taking velocity are:

An instrument known as a chronograph is used. Briefly, this is an instrument (See Fig. 11) in which a rod is held in suspension by means of a magnet, and the distance that this rod drops from the time the bullet hits the wire at the muzzle of the gun until it hits the target is measured. By means of tables this distance is transferred into time, and the time of flight of the bullet from the muzzle to the target is measured, thus determining the velocity.

The operation of this chronograph is as follows: The magnet (a) supporting the rod (b) is energized through a wire directly in front of the muzzle of the gun. When the gun is discharged the bullet breaks this wire and the magnet then ceases to be energized, and the rod drops. Near the bottom of the chronograph is a release mechanism operated by means of another magnet (c). This magnet is operated by a contact at the target. When the target is struck by the bullet, this releases this contact and this marker (d) hits the rod in its flight and gives the distance that it has dropped. This is a very brief description of the method of taking velocity.

The above explains how satisfactory ammunition is manufactured. It does not in any way give the shooter an idea of the immense amount of money continually being spent by the manufacturer to improve the ammunition which is being used by the shooter. Research work is continually being done on the bullet and all other components. This means the maintaining of an organization for carrying on this work, because the manufacturing organization proper is too busy turning out ammunition of the proper quality to be able to spend time on research work.

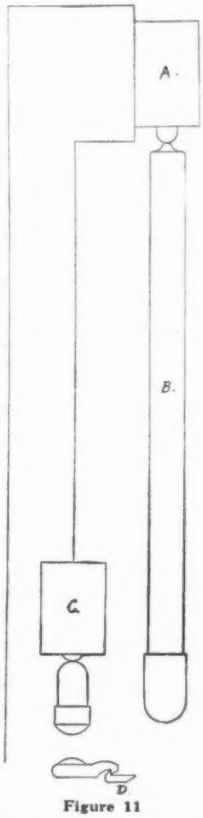


Figure 11

This research covers the kinds and quality of materials, from the raw material to the finished cartridge; covers experiments in various kinds of materials and the treatment of same; shapes, diameters and compositions of bullets; experiments in the manufacture of the empty shells, priming mixtures, powders and other lines; all leading to improvement in the ammunition. If at any time better ammunition is made by the experimental or research department, the shooter immediately gets the benefit.

In conclusion: The secret of first-class ammunition of any type lies in a first-class factory organization, working with the best possible equipment, exercising eternal vigilance and striving to maintain the highest possible standards.

The October 15th Number

By Charles Askins

SEEING that I had nothing in the October 15th issue myself, I have a free hand in saying what I like about the articles in this number. It is one of the best numbers of THE AMERICAN RIFLEMAN that I ever remember seeing.

"Winning the Annual International," by Frank J. Kahrs told me all that I could have learned had I been there, and maybe more. Reading the report of the Dewar match, one gathers that a shooting team has other members in addition to those that hand'e the rifle. On the face of things it would appear that all requirements would be filled by twenty good shots getting together and every one making his own individual score in his best form. In his best form—that's where the trouble will come in. Is some one shooter going to need a coach — is it possible that every one of them will do better by skilled coaching? Looks like it. Witness Colonel Tewes bringing one man through with a tied world record and turning right around and coaching another man into beating the record. The right man coaching goes a dickens of a way in team shooting, as witness Fisher with Major Waller behind him and Fisher going it alone. I didn't see the Dewar shot, but I know all about it, thanks to Frank Kahrs. I have felt, as though I had been on the team, the keenness and the sternly repressed anxiety that must have been felt by every member of that team while the shooting was going on. Mr. Kahr's criticism of those members of the team who had so much on hand that they barely had time to shoot the Dewar is both apt and needed. It is decidedly unfair to other members of the team to have some man with his mind set on winning some petty individual match, thus handicapping and perhaps irritating all the remainder of the team.

"Rifle Experiences in Portuguese West Africa," by Robert H. Wamsley. That man Wamsley has horse sense. I have never believed in this foolishness of having to reduce muzzle velocities below 2500 feet in order to get bullets that would stand up under impact. I am glad to see a new bell on a new sheep that is going to lead off on another tack. When Mr. Wamsley says that it takes velocity to kill on the spot, I am right with him. No game rifle except the very large calibers, ought to be loaded to a less velocity than 2600 feet, and 2800 to 3000 is better. Many of us have been trying to imagine why a solid, big bore bullet at low velocity kills so well. Don't try to imagine it, because it doesn't do it. In the eighties people were having all kinds of trouble trying to make the .45-70 upset enough on impact to kill game promptly. Bullets with great holes in the point were used, and sometimes a .22 or .32 rimfire cartridge was placed in that hole to insure upset. I remember about 1890 shooting a deer with a .45-70-405, hitting him in the flank. Deer went on as though nothing had happened to him, and but for the use of a couple of old hounds who followed the beast about three miles, we never would have seen him again. A 256 would have torn the whole insides out of that deer and dropped him in his tracks.

What Mr. Wamsley has to say about the Newton .35 is precisely what Cottar told me. He told me that on all kinds of game, including elephants, the .35 Newton was by far the most deadly rifle he had ever used. His criticism was exactly what Mr. Wamsley has told us, the rifle was too powerful for its weight, action and stock, finally splitting the stock. All of which leads me to make this prediction: All the rifles being made, of a caliber less than 40, of a velocity less than 2700 feet, are practically obsolete right now. Like the nigger's turtle, they are dead but don't know it yet. To bring out new rifles of less velocity than 2500 feet is merely catering to the craze of the moment.

Major Hatcher's "The International Matches at St. Gaul," simply tells how it happened and not why. One of the whys was because Major Waller wasn't there, I guess. Another may have been due to a Quantico Try Out, instead of a Regional Try Out. Not all the good shots in America are going to be right in the immediate vicinity of Washington. Matter of fact, or I think it is a fact, if the right amount of prize money were hung up for these Free Rifle Matches at Camp Perry, say five hundred dollars for first place and half of that for second, a team could soon be developed here that would beat our own International Team as badly as the Swiss did. People are not going to procure free rifles, to go to Camp Perry or Quantico on their own account,—unless they have a sporting chance to break even.

"The Rifleman in Battle" is both very well written and extremely interesting, from the experience of the writer. Not many of us have had such an opportunity to see what could be done with a rifle. Captain McBride is to be congratuluated for the things he has seen and the things he has done. I'd have been very well satisfied with that war if I could have tried my rifle and myself as Captain McBride did. A lot of things I wanted to know and never will now. I wanted to know whether I would be so scared that I couldn't shoot or not. I have always wanted to know something about myself as well as about other people. Dang it! I never will learn now, for I had hard luck while the recent scrap was going on. Anyhow, Captain McBride knows, and we are going to listen to every word he has to say.

"The Police at Perry," by Elmer Keith. I'm hanged if I see why every policeman has to get fat. The whole bunch is over-weight—all but the girl in the Navajo blanket. Of course a fat man can shoot, even if he can't do anything else—therefore this team of fat men from Portland, Ore., could shoot a pistol. According to Mr. Keith the Portland Championship team could shoot well, not because they were policemen whose business it was to shoot, but the real secret of their good performance was simply fat. It is a fact, I guess, that it requires less exertion, less movement to hold the gun right on the bull than it does to swing it all around the bull. A fat man isn't looking for any more exercise than the situation warrants, so he merely points his gun at the target, refrains from moving it and pulls the trigger. If this kind of thing keeps on, our well-known coaches like Major Casey, Col. Tewes, Captain Kahrs, Major Waller and others are going to insist upon a man's being fat the first thing. Well, my boy says that Camp Perry is a fine place to fatten up—with eats far superior to any training camp he has ever attended.

"Single Spark Photography and Its Application to some problems in Ballistics," by P. P. Quayle. That article is worth a year's subscription to THE AMERICAN RIFLEMAN. I am only sorry that every rifleman and shotgun shooter in the United States couldn't see it. They'd see it and a darn lot of other fine things, if all of them would subscribe to THE AMERICAN RIFLEMAN, which they should.

Mr. E. Newitt tells us why the British didn't win the Dewar. Let me tell you something. Some one of these days one of those lads over there will tell us just how they did win it—now you hear me! They'd have won it this year hadn't it been for Col. Tewes, Captain Wotkyns, Frank Kahrs and a few fellows that did the shooting.

I do not quite understand the conditions of the American Record Match. Does each of these men shoot on his own range, at home, shooting being properly witnessed, and are the targets then sent in to the secretary? I suppose the target is the German Ring, ¾-inch rings, center counting 25, and possible 250. If this was the target 458 is pretty good, distance being 200 yards, and I'm hanged if I see how it was done with a .22 rifle.

Harry Pope tells us of some shooting match in that Metropolitan Outdoor Championship. Going through a match from 50 to 200 yards, no sighting shots, and only one shot down is going some. I am willing to bet that the man who made the 349 points out of 350 will never do it again. I do not see, though, why, one offhand match was not included in that Championship, say ten shots at one hundred yards. That sort of match would relieve the danger of ties, so I'd think.

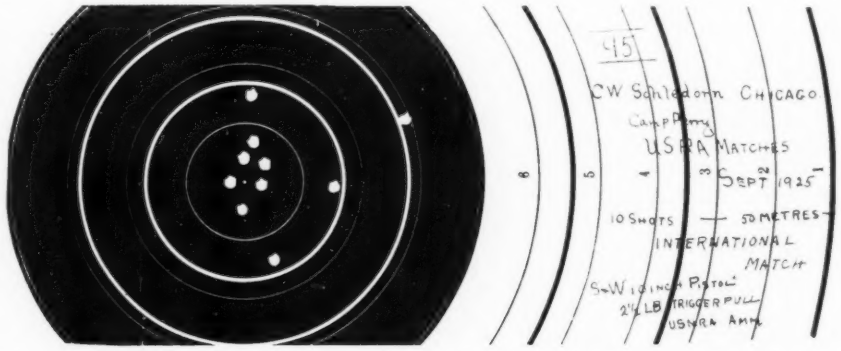
Major Townsend Whelen has a lot of good stuff under the heading of Dope Bag—the best that can be obtained anywhere, in any ammunition and gun *(Concluded on page 21)*

Tuning In for the International

By Roy D. Jones

IF I only had a longer barrel—if I only had a lighter trigger pull—if I only had a faster cartridge—if I only had a lighter hammer fall—if I only had quicker barrel time—if I only had this, that, or the other, is the song of the American International pistol shot. Of course I don't mean to infer that he is the only alibi producing expert in the in the shooting game, but just at pesent he seems to have the stage.

As the writer has been working with pistol men for a good many years, and uninterruptedly for the past six, the answer to all of this alibi hunting stuff is "Bosh." What the United States Pistol Team needs to win, is



five men of sufficient caliber to shoot better scores than the foreigner does. For four years now we have experimented and played with this subject from all angles, and have listened to the case of the rifleman who boasts about his wonderful refinements, pressure barrels, Swiss butt plates, palm rests, set triggers, all of which unquestionably have their value in the rifle game.

It is, however, a very different proposition when one stands upon his hind legs with a rifle braced with shoulder, palm rest, sling strap and at the trigger guard, to standing on the same pair of hind legs with a handgun balanced on the tip end of one wing and no support whatever except the moral courage and clear conscience of the man behind the gun. It reminds me of a police officer some years ago who explained his missing by the fact that the 4"-barrel of his revolver was too long, that if it could be cut off to 2" he could put them anywhere he wished, for he had noticed that the entire wiggle was on the front end of the gun.

I have conducted tests from every angle which has been brought forth—have increased the barrel length up to 18", and put on extended rear sights and extension front sights up to 24", have worked trigger pulls down to nothing and a half, have whittled, moulded, cast, and in various other ways brought into the world a mess of stocks and grips the like of which the world has never seen, and have finally come back to the conclusion that the fault is entirely with the man and his lack of training. Nothing could be more foreign to the American idea of shooting than taking 24 hours in which to shoot sixty shots, shooting part on one day and part on the next, as was done at the last International shoot.

I am going to use names in this article to illustrate points, and do it without consulting the victims. In direct opposition to this method, but complying strictly with the American idea is the case of Dr. I. R. Calkins, shooting in the Indoor International of the U. S. R. A., a new match adopted by the Association for the purpose of fostering closer holding, and carried out in his own way when he established the new indoor record of 570 in sixty shots, banging them down in one hour and five minutes for an average of 95 per cent shooting on this tiny bull's-eye. Of course this match is not in positive relation, because while reducing the size of the rings proportionately to the distance, we are unable to reduce the proportionate size of the bullet to correspond. It is, however, the best possible effect we have been able to get yet.

The recent Camp Perry Matches for the first time in many, many years gave an opportunity for an absolute reproduction of the International shooting. When the invitation was received from the Executive Officer of the National Matches for the U. S. R. A. to participate and assignment was made of the International range to them, the opportunity was seized with joy by the members of the Revolver Association. The rules of the governing body of the handgun vary greatly from those of the N. R. A., the N. R. A. shooting entirely according to Army standards, yet introducing civilian arms into their matches. Furthermore, the shooter in the N. R. A. Matches has to accept the marking of the man in the pit (subject to a challenge if error is too apparent), and at the end of his string has but a score card to show for it. Under the U. S. R. A. system the target itself constitutes the record, and after being shot is brought to the statistical line and is there scored, the official scorer using, if necessary, a plug turned to the exact standard diameter as the bullet being used, and giving the contestant absolutely all that his good holding calls for. As this scoring is done in his presence, and as the target remains a matter of record, it is possible to reproduce it if a record is broken.

This friendly overture not only produced a wonderful feeling of cooperation among the shooters, but also served to make the N. R. A. Shoot more successful. The 577 re-entries which we shot in the first five days on the International range relieved the pressure on the N. R. A. to just that extent, and any contestant who stood around a half or three-quarters of an hour waiting to get another string in on the over-crowded N. R. A. pistol range fully appreciated his opportunity for plenty of shooting at the other end of the grounds.

By a rather strange coincidence the Springfield Club men nearly duplicated their feat in the 1923 International tryouts where they qualified four men of the five, and also the first alternate from this one club. This year's re-entries found Dunn of Springfield duplicating his win of 1923 and leading the field as his very excellent 548x600 entitled him. He was closely followed by Dr. Calkins of Springfield with a 539, Ray Bracken of Columbus, Ohio with 538, Wescott another '23 Springfield veteran with 530. Vice-President of the U. S. R. A., C. W. Scheldron of the Hamilton Club of Chicago was fifth man with 520, and the other three completing the string of six Springfield men were, Dr. Russell with 514, M. H. Bingham 505, F. W. Wilbur 501, H. S. Weddel of Tuscon, Arizona had 500 and J. M. Dugan of Cincinnati 487. Tucked away in the middle of Scheldron's score was a target which is reproduced herewith, a 95 International count which would have been a 99 American style, and is as far as we know, the best score ever shot by an American upon this strenuous course. It exceeds by one point that shot by Karl Fredericks in 1923, and is one of the things upon which we base our argument that the American shot is not under armed, but that he does not shoot up to the capacity of his equipment. Every one of these scores was shot American style with the ordinary 10-inch Smith & Wesson target pistol, open sights and standard trigger pulls in excess of two pounds. They were also fired off in the vicinity of ten minutes to the string. This same gait was maintained when it came to the finals which Dr. Calkins won with a 522, shot in one hour and six minutes including time used in changing targets.

Although three or four of the men took their new Straight Line pistols to Camp Perry, yet they did not shoot them in the Matches. It was decided by the team Captain that owing to the fact that so few of them were in the hands of the shooters, it would be unfair and unquestionably raise the feeling that a win with them was taking an unfair advantage of the men with the unfilled orders. From now on the New Straight Line balanced gun

will be in use for the International work.

On the other end of the line the N. R. A. started to run a free pistol match, but were unable to fulfill the International conditions, therefore shot the same on the 50-yard range using the 50-yard American count, which of course does not compare with the scoring of the much smaller International rings. This match was won by Gunnery Sergeant Bailey, the 1924 Olympic champion, shooting a Colt automatic pistol in .22 caliber. This still further carries out our contention, for his sight base was much less than 10 inches, and his barrel a very considerable per cent shorter than the sight base, owing, of course, to the breech block.

We have recognized for a long time that the home range here being in a very beautiful dingle with a horseback to the west, with another to the east, swinging across the bottom of the glen and making a natural backstop, is conducive to wonderful scores on account of its wind protection, but it is anything but a good training ground for the men who leave here thoroughly trained in shooting on a range with the targets in the South, but who arrive at Camp Perry to shoot on a wind-swept plain, and with the sun behind them and the targets to the north.

When it comes to the analysis of what is the matter with the American International shooter, we begin to find many and varied reasons. In the first place, he is more or less of a temperamental cuss, and having a job to do wishes to get it over with at the earliest possible moment. If one has ever seen the foreign expert hold out the gun for ten or fifteen minutes, finally decide it won't do, take it down, go out and have a promenade, maybe a demitasse or perhaps a whole "tasse" of something stronger than coffee, pass the time of day with a dozen friends, come back, pick up the pistol and once more strike his position and hold it out for a few minutes, maybe touching it off, maybe putting it down after another session, he will then know the meaning of American temperament.

Any man who has followed the game can count on the fingers of his two hands all the shooters we have in the country who ever take down after having decided to fire a shot. Dr. Calkins' 570 indoors, slammed out in one hour and five minutes including all the target changing for twelve targets, will give a good conception of how nearly 100% a man's shooting must be in order to score in this match, firing American style. We are essentially a quick action "hit 'em up Jack" sort of people.

Two years ago while looking over the field and hunting for some direction in which to make a crash, I asked Price how it was that he could shoot a 247 in the 25 shots, only three points down, yet the world's record for 50 shots was 482, eighteen points down. He is an old track athlete and immediately began to wonder why. It is well known that the time for the 220 could not be doubled for the 440 or very nearly. The result was that he began to train for the longer distance and succeeded in breaking the 50-shot record one point. This immediately drew Dr. Calkins' attention, and he took it away from Price last year with a 486, and I still contend that men who could shoot 248 and 249 for 25 shots, one and two points down only, had no license to be shooting 14 points down for 50 shots. Dolfen getting the spirit immediately put across a 487 for the 50-shot stretch, and as his best 25-shot score is a 246, he is doing proportionately better for his 25 string than either of the other two. This record is still too low and it will be beaten, but only by men who will train for the long gruelling 50-shot series. When we get to the International with its 60-shot string, we have precisely the same condition, but very much multiplied, with hazards increased by the fact that our fellows think it must be slammed through and they fail to take the advantage of the time allowed.

Not long since I was discussing with one of our good men the peculiar coincidence that his first and last shots are always 10s, and the deduction therefrom is that he concentrates harder in order to make a good start and he tightens up again in order to make a good finish. If he is going to shoot the International and will approach it with the same determination with plenty of time in between the shots, I contend they will all be first shots, therefore 10s or thereabouts. So much for weakness No. 1.

The second glaring reason to my mind comes from the over-anxiety whereby men who can go out in practice and shoot with an absolutely limp arm, suspend entirely from the shoulder and back muscles, will invariably, when getting toward the finish of their long match, tighten up on the arm and begin to shake them out.

We are constantly asked why this team here can so consistently turn out good new men. I believe the answer comes entirely from a study of the small things which go to make up a top-notch shooting man. When a novice begins to shoot, no particular attention is paid to him until he reaches about a 70% gait, of course I do not mean he is not taught the fundamentals, but he is allowed to take his own positions and go after the game in his own way. When he strikes about the 70% time we begin to check up for errors and corrections, and a bit at a time his foot position, body, arm and grip are analyzed and experimented with. It is only by this fishing around and hunting for possible improvements that we are able to gradually develop their scores to the point where they are.

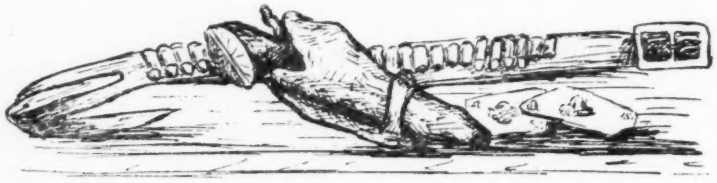
Nearly all of the targets shot by a novice show clearly what the error is which needs combating, but if the Shooting Master will take his novices into a dark firing point and stand directly behind them while they shoot a string, he will very quickly find out if they have the one first difficulty, which is body motion. By lining up the shooter's head, arm and pistol while he is attempting to get away the shot, he will be found in nine times out of ten to be waving back and forth with a body sway. A slight movement of his left foot away from his line of fire will generally act as a brace rendering it impossible for him to have a sideways motion.

Another very glaring fault indicates itself just as clearly against the light background when a novice has a tendency to tighten up the muscles of his arm as he begins to get ready to get the shot away. An otherwise perfect holder, until he has mastered himself, will be seen to put a little tremolo into the gun just before he concludes he is lined up, with the result that they go anywhere but.

Pistol shooting is the finest training of them all, and a man who can hold and squeeze a handgun for a consistent run will find that he has improved his rifle shooting very greatly. Likewise the small-bore game is a perfect understudy in every way for the big one with either rifle, revolver or service pistol. We contended that no service pistol shot should ever be allowed to touch the full charged big boy until he *knows* that his perfectly lined sights and co-ordinated trigger pull will put them in the ten ring, and after he is firm in that belief, caliber is immaterial.

If we are going to do this international job, much less attention shou'd be paid to the matter of arms with their artificial niceties, but much more to a thorough training, particularly with regard to the light conditions which will obtain upon the foreign batt'eground. Every handgun man knows that light striking his sights from the right or the left will throw his group very materially, and that shooting against or with the sun, shifts his elevation. These two worries should be taken care of by practice under the conditions which are to be met.

The matter of trigger pull has sounded like something of importance, but it is our contention that a pistol man who is using his regular gun with the 2¼ or 2½-pound pull will be able to function it to far greater advantage than to attempt to learn to pull a hair trigger gun which calls for no gripping whatever, just a mere balance with an independent touch of the forefinger. The trigger pull is purely a matter of coordination and it makes not an iota's difference whether the man is tickling off a half-pound one when his sights are properly aligned, or whether he is gradually squeezing off a 2½-pound one, also when his sights are properly in line. In all other classes of American shooting it is a heavier pull let go when everything is properly coordinated that gets the bull's-eye, then why not stick to the same system rather than try to produce a short cut and easy method toward that heaven which we all desire, a perfect score. The answer and the only one that I can see is, practice. Let's go.



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In Defense of English Rifles

By Judge H. H. Ostler

I READ the articles in THE AMERICAN RIFLEMAN dealing with ballistics of rifles and killing power of bullets with intense interest. I have shot some hundreds of red deer in New Zealand. Our feathered game is decreasing at a more alarming rate than it is in America, and one has to go far afield to obtain good duck or quail shooting. The quail are your Californian. Your Bob White for some reason or other, although introduced on several occasions, has never flourished. A few survive here and there only. But the Californian quail has made the North Island his home. He loves new felled bush, but as the logs decay he gradually abandons the district as it becomes more settled, and he is found only in the unsettled interior. The pheasant, which did so well here for years, is now fast disappearing and will soon be a thing of the past. But the red deer, introduced from Scotland and the English parks have increased so enormously that it has been discovered by our zealous forestry officers that they are doing great damage to our natural forests, and the edict has recently gone forth that the protection of the law must be removed, and every one is invited to take part in the slaughter. So greatly have they increased that for many years it has been a condition of permission to stalk on some of our rough sheep runs, that the stalker after obtaining the heads which his license allowed, should shoot at least 100 deer, and consequently I have had exceptional opportunities of trying the killing power of various rifles and bullets. I have also had two big game hunts through Africa, been at the death of eleven elephants, seven of which fell to my rifle alone, and have also shot most kinds of African game. In all my shooting I have used no rifles except those made by English gunmakers. I have indeed tried the 1895 Winchester firing the .303 cartridge, a clumsy, ill-balanced, over heavy, badly sighted arm. I have also used the .280 Ross and the .256 Newton, both of which perform splendidly on red deer, but both of which are ill-finished, and as received from the makers, ill-sighted weapons.

I have been very much struck by two articles in your August number. One on thick-jacketed game bullets by John Lynn, and the other entitled "When the Best is Worst," a a criticism of English rifles by Major J D. Sloane.

Dealing first with Mr. Lynn's article, he speaks of the .300 Magnum, apparently made by Hoffman, as something to talk about with bated breath, as the very last word in modern high-velocity killing machines.

The ballistics he gives are:

220-grain bullet: 2586 f.s. velocity, 3267 ft. lbs. energy.

180-grain bullet: 2854 f.s. velocity, 3256 ft. lbs. energy.

Now the Westley Richards .318 rifle came out about 1906, and was on the market and being extensively used in 1909, sixteen years ago. The ballistics of that rifle are:

250-grain bullet: 2534 f.s. velocity, 3470 ft. lbs. energy.

180-grain bullet: 2850 f.s. velocity, 3250 ft. lbs. energy.

It will be seen that with regard to the heavier bullet the ballistics are distinctly better than Mr. Lynn's modern wonder, whereas with the 180-grain bullet they are practically identical. But the Westley Richards .318 with 250-grain bullet was on the market 16 years earlier, and there can be no question about the published ballistics being right. Now I happened to use a .318 for general shooting in both my African trips, using the 250-grain bullet all the time. On the second trip I did take some cartridges loaded with the 180-grain bullet, but the other cartridges were so uniformly satisfactory that I did not go to the necessary trouble of adjusting the sights, and so never used them. I have, however, used them on red deer, and their effect is devastating.

With the 250-grain solid bullet I killed five elephants. Four of these, however, were brain shots, and I have no doubt that the 250-3000 Savage with full patched bullets, if it hit the right spot would be equally fatal. But these bullets shot right through the elephant's head in most cases, and came out the other side making a hole no bigger than the entrance hole. In the fourth case, however, the shot was at the backbone of a bolting elephant, and it instantly paralyzed its hind quarters and brought the elephant down. With solid bullets I have also shot four buffalo, in each case bringing them down with one shot, and none of the four was able to get to his feet again. It is true that each of these shots was well placed in the chest cavity, and no doubt if it did not actually touch the heart, tore through arteries or lungs. I was with a friend also when he brought down three buffalo with three successive shots, and none of them were able to rise. I only killed two lions in the two trips, both with a copper-capped round-nosed 250-grain bullet. In each case the beast was standing sideways on, and the bullet came out the other side, making a hole that one could thrust four fingers in. In one case the beast dropped to the shot. In the other case it charged but it was fighting for breath and it turned off and in a little while fell and died almost immediately.

The eland is the largest of African ungulates. A bull eland full grown and fat will weigh close to 2000 lbs. The 250-grain copper-capped bullet almost invariably knocked him off his feet if hit anywhere near the right place. I did this with the biggest bull I got at a distance of 270 yards, and when I got up to it, it seemed unable to rise although still kicking. The roan antelope is nearly as big—quite as big I imagine as your moose. I shot three with a 400-360 cordite express rifle, and they all ran some distance. I got two with the .318 and they both dropped to the shot. The bullet is the best I have ever used on all thin-skinned game. In no case have I known it to go through a red deer. It always came out the other side of the small African buck, buck up to the size of your black-tail, but in anything larger it never came through, but it always mushroomed perfectly and nearly always could be found just under the skin on the other side. I killed a hippopotamus with one shot in the side of the head with a copper-capped bullet. I used this as I had no solids with me, but it went through the thick skin and cut a hole through the thick bone into the brain pan that you could thrust your first finger into. I never had the chance to try the rifle on a rhinoceros.

I have said enough to show that the English gunmakers had produced a cartridge and bullet nearly twenty years ago that would do the work that your American makers are just learning to imitate in their latest rifles. As I write I have Hoffman's catalog before me, and every rifle he lists (except your Springfield) is an imitation of some rifle brought out by an English maker years ago. The .505 was borrowed from Gibbs; the 425 from Westley Richards; the .404 from Jeffries; the Accelerated Mauser from Rigby, etc.

Now to deal with Major Sloane's article, it is quite true that for a year or two after the War, when the trade had been thoroughly disorganized, when the skilled hands had been killed or maimed, and before new staffs could be trained, English rifles in many cases fell away from their high standard of excellence. All I can say is that I have owned a large number of English made rifles, and I have only had one that was not all that could be desired in accuracy as well as finish. I was glad to see Major Sloane praise Rigby's work. I shot with one for many years and it didn't have a single fault. I have never heard of a faulty Rigby. I took a Holland and Holland rifle out to Africa last time for a friend. It was just perfection in every detail. The picture in Major Sloane's article is obviously of a Westley Richards rifle, because it has their registered sight protector. In my last Westley Richards .318 I never had a jam or a deformed bullet tip, and although I can not claim to be a tack-hole shot, the rifle shot with all the accuracy I could desire. I think Major Sloane must have been unfortunate in getting hold of several English rifles turned out immediately after the War. Personally I have never used an English rifle that I did not find was sighted so that I could hit game with it at sporting distances. The pull on my Westley Richards was a double pull.

It took a little getting into, but I never want a better. You could pull the trigger nearly off

while the sights were coming up, and just as they came on a little extra squeeze was all that was necessary. As to the finish, there is no comparison. You can buy a .318 stocked sighted shot and hand finished by a new Bond St. maker for £21 which is about £10 cheaper than you could buy a Springfield hand finished by one of your hand-made gunmakers.

I have just gotten out from England a .275 made by Cogswell and Harrison and most beautifully stocked and finished. This rifle cost £25 in London. I haven't seen the work of your hand-made gunmakers yet. They look all right in the picture and they would need to be good at the prices they charge, and if they are any better finished than the best English rifles they must be good indeed.

In one thing I admit you Americans are ahead of us. You load your cartridges with better powder altogether. The English gunmakers are in the hands of the great cartridge trust of England. That trust, having a monopoly, refuses in spite of the wails of the rifle makers to go into nitro-cellulose powder, and sticks like glue to cordite which is so hard on the barrels. That is a grave defect. But so far as rifles are concerned it seems to me that you are still lagging behind the English in ballistics, and have really borrowed your newest high velocity rifles from them.

Editorial Comment: Every rifleman will be interested in the comments of the Hon. Mr. Justice Ostler on the two previous articles appearing in THE AMERICAN RIFLEMAN. Judge Ostler is a member of the Supreme Court of Wellington, New Zealand, and he is a thorough sportsman who has had extensive experience in the big game fields of the world. His experiences are particularly interesting as they are based on actual use of rifles on big game. While THE AMERICAN RIFLEMAN can not agree with many of the Judge's views and opinions, we nevertheless present his paper as a matter of fairness. Under no circumstances would we desire to "freeze out" so sincere a sportsman merely because his views did not happen to agree with ours.

We think perhaps our experiences on which we base a comparison of British rifles with the best of our modern product have been unfortunate in that it seems to us from what we can learn and judge that we have been the dumping ground for Class B rifles, or "seconds," so we may not have been comparing our own excellent rifles with the very best product of the London gunmaker. Certainly this condition has existed since 1920 and it pertains both to British weapons imported for sale and to those ordered specially by our most prominent sportsmen. Also the condition still exists, as an examination of recent British rifles by their most celebrated makers recently imported by our leading New York dealers shows that in no respect can they be compared with the average product of at least three of our own firms who are catering to the custom trade in high grade rifles.

Quite generally we find that all the British rifles we have examined have a groove diameter averaging from .0015-in. to .002-in. larger than the diameter of the bullets. Also we find that apparently there is no relationship between the throat of the chamber and the bearing and ogive of the bullet. From such barrels and bullets we would expect groups running from 8 to 12 inches at 100 yards, and that is exactly what our target tests of their rifles show, whereas our best modern rifles with our best modern sporting ammunition average 3½ to 5-inch groups at 200 yards. We are speaking here of ten-shot groups and average groups, not selected groups.

We find that almost every lot of British ammunition examined, even by the same maker, shows a slightly different average weight of bullet, and an entirely different powder charge. We fail to see how a British rifle almost invariably equipped with a non-adjustable open sight, can be kept even approximately in correct sight adjustment for these varying cartridges.

We find that almost invariably the British ammunition contains Cordite or Axite powder, and bullets with cupro-nickel jackets. We think that the erosion and metal fouling occasioned by such ammunition indicates marked inferiority to our own ammunition.

We have seen very few British magazine rifles where apparently any attention had been given to obtaining a good trigger pull or an easy working bolt.

In workmanship on the exterior of breech action and barrel, and in workmanship on the stock we have seen a number of British rifles which would compare very favorably with the best that our gun-makers can now turn out. But invariably the British stocks are lacking in those features of design which we have found to contribute very materially to accuracy and rapidity of shooting.

We do not consider that because one rifle fires a cartridge having more power or higher velocity than another rifle, that the former rifle is thereby superior to the latter. The latter rifle may have ample power and velocity for the purpose, and there are many other features in a rifle which need consideration in addition to power and velocity. In fact many of our leading riflemen and sportsmen look upon excess power and velocity as detrimental features because they increase recoil, barrel wear, and weight of weapon with no attending advantages.

Justice Ostler has invited attention to the .318 Westley Richards Magnum rifle and cartridge. We are quite familiar with them and we share his high opinion as to their worth. The .318 Magnum cartridge has been used all over the world, on all kinds of game, to such an extent that there can be no doubt as to its excellence, and also as to the excellence of the Leslie Taylor capped bullet which this cartridge uses. Nevertheless we think it best to point out some of the findings of our investigation of it.

Major Gerald Burrard, the best British authority we know on the subject gives the following data as to this cartridge:

250-grain bullet, 39 grs. Cordite, M.V. 2340 f.s.
180-grain bullet, 56 grs. Cordite, M.V. 2850 f.s.

We have before us record of a test made by the Remington Arms Company. .318 Westley Richards Mauser rifle, 26-inch barrel, Kynock cartridge, 252-grain bullet, 46 grains Axite powder, remaining velocity at 78 feet 2257 f.s., corresponding muzzle velocity 2312 f.s.

We also have before us the record of a test made by E. I. Du Pont de Nemours & Company—Kynock cartridge, bullet 250 grains, Cordite powder, muzzle velocity 2202 f.s. Also Du Pont at the same time developed a charge for this cartridge, 250-grain bullet, Kynock case, of 53 grains of Du Pont No. 15½ powder, giving M. V. 2322 f.s.

We have no actual chronograph figures of the .318 bore 180-grain cartridge. Both Westley Richards and Major Gerald Burrard give it as M.V. 2850 f.s. We feel sure that this must be for a 30-inch barrel. If so the muzzle velocity in 24-inch barrel must be below 2600 f.s. for this same cartridge loaded with 56 grains of Cordite. We have never seen this cartridge in the United States. Those we have been privileged to examine contained a charge of about 43 grains of Cordite, and from them we would expect about M.V. 2475 f.s. in a rifle with 26-inch barrel. Our 180-grain .30-06 sporting cartridge regularly gives M. V. 2720 f.s. in Springfield rifle with 24-inch barrel.

Recently we had opportunity to examine three types of Kynock ammunition sent to a sportsman by Messrs. Westley and Richards together with one of their rifles. One cartridge contained a pointed, copper-capped bullet of 177 grains with a charge of Cordite powder. The length of the bullet was 1.330 inches, and average diameter .325-in., but the bullet was not round, it being deformed by the three-point crimp of the case. Another cartridge contained a round-pointed copper-capped bullet which weighed 249 grains, length 1.365-in., diameter .325-in., Cordite powder. The third cartridge contained a sharp pointed, copper-capped bullet weighing 251 grains, length 1.493-in., diameter .3245-in., Axite Powder. The bearing of all three bullets outside of the case, and their ogive differed considerably. The overall length of cartridges was 3.398-in., 3.395-in., and 3.525-in., and the length of cases 2.360-in., and 2.385-in., respectively.

We have at hand a letter from Westley Richards and Company, Limited, dated December 27, 1923, relative to their .318 rifle and cartridge, from which we quote the following:

"The velocities of the .318 rifle with 250-gr. bullet, which we introduced, was fixed at 2,500 ft. secs. at muzzle, in a 30-inch barrel. That was the comparative standard of velocity for all sporting rifles; and all rifles being subject generally to some vicissitudes of conditions, etc., the standard of comparison remained the same as a relative constant, under changing conditions which might affect the accepted standard figure. We need not labour the point; it is so obvious."

"We observe that you report a muzzle velocity of 2,312 ft. secs., in a 26-inch, .318 bore barrel, which we consider very good, since the 2,500 ft. *(Continued on page 10)*

Bombs, Bayonets or Bullets

Gentlemen, Choose Your Weapons

Captain H. W. McBride

THE final stage of a battle, brings into play the short-range weapons (finishing tools, I have heard them called), hand grenades, pistols and bayonets. Grenades are especially effective for the work of cleaning out entrenchments and dug-outs but, in the open, can not well be used at ranges under about twenty yards as the fragments will fly just as far backward as forward, without partiality. From, say twenty-five yards, down to ten, the rifle can be effectively used, without bringing it to the shoulder. And right there we bump into the bayonet-pistol controversy. Which is the better arm for this final encounter—or can either of them be dispensed with? Now, all of us who have done much pistol shooting, know very well that one should *never* miss a man-sized target at ten yards or less. Furthermore, any man who has not only learned to shoot with a pistol but who has also learned that much more important lesson: how to keep cool in a pinch, should be able to stop at least three or four bayonet men within that distance. This being the case it seems to me that the proponents of the bayonet are going to have a hard time to prove that this weapon has not outlived its effectiveness. Of course they lay great stress on the moral or, rather, the psychological effect of what is popularly described as "the cold steel" and that this effect does, in fact, exist, cannot be disputed. There is no doubt that most men feel an instinctive horror and dread of sharp or edged weapons: a feeling very much like that occasioned by the sudden sight of a snake, and it is my personal opinion that this forms the only real basis for the argument that the bayonet is still worth while—simply for the demoralizing, psychological effect it is supposed to produce in the average man. While admitting this point, I contend that this feeling can be conquered and the bayonet menace very effectually removed by a shot from any good pistol. Having done it and seen it done by others, I am perfectly satisfied on that point. The main point, which should not be overlooked is that it is essential that the man with the pistol should have the ability (and the confidence inspired thereby), to deliver his fire with speed and accuracy. This accomplishment can be acquired only by long and intensive practice and training: not so long, however, as that required to properly instruct a man in the use of the bayonet.

The official hand gun in the Canadian Army was the .45 caliber Colt automatic, (identical with our Model 1911). A few of the officers preferred revolvers; Colt, Smith and Wesson or Webley, but the majority stuck to the automatic. Several members of my machine gun section equipped themselves with this arm, I being the first to obtain permission to carry it. We seldom had occasion to use them but they never failed to function in a perfectly satisfactory manner whenever called upon. The only ammunition I used was some I had sent to me from home and was the product of one of our oldest and most reliable manufacturers—vintage of the "Spring of 1915," I think it was. An acquaintance, another machine gunner, had two Colt revolvers, chambered for the .455 Webley cartridge. (A good one, too, for short range.) He was an experienced and expert pistol shot and used these weapons at every opportunity. It was said that he had a playful habit of accosting prisoners, especially officers, something like this: "Say, Heinie, is that helmet of yours any good? Let's try it out": then, *whang* would go one of those big lead slugs and down would go Heinie: effectually "knocked out" but never seriously hurt—that is, not often, for, as noted above, J—— was a good shot and seldom missed a helmet.

The arguments as to the relative merits of the revolver and the automatic, will probably continue during the life of the present generation of "old-timers," by which I mean all of us who learned the shooting game before the advent of the automatic. Each type of arm has its unquestioned advantages; likewise its faults. I have used the .45 automatic ever since its adoption by the U. S. Army but for twenty years before that time had used the revolver and my favorite was the .45 caliber, single-action Colt. Even now, I still retain a sneaking preference for the revolver and feel confident that I can make a better score with it, either at slow or rapid fire but, in spite of all this, I would, unhesitatingly, choose the automatic for actual service in war. It is plenty accurate enough to hit any man-sized target at pistol ranges and in the matter of reloading is far superior. This point, alone, in my estimation, more than offsets any real or fancied advantages possessed by the revolver. Any doubter can satisfy himself about this simply by trying to reload a revolver, *in the dark and in a hurry*, while being jostled about by a milling crowd of "cave men," all trying to hit some one, (any one), with clubs, brickbats and fists. As to reliability, I can only repeat that I have never had a failure to work properly while in action nor did I ever know of any such failure in the experience of any of my personal associates or acquaintances. I have "heard of" any number of such instances, but always at long range and usually told by persons whose "line of duty" was such as to preclude the probability of their ever having really "gone to war" to the extent of having actually participated in real, hand-to-hand fighting. From experience and observation on the target range, we all know that breakages, miss-fires and jams "can happen" (even rifles and revolvers sometimes go wrong), but on the basis of the number of shots fired, I think the percentage is exceedingly low; negligible, in fact.

Hand grenades are mighty useful little articles to have about. When scouting around at night, if in doubt whether some particularly dark spot is occupied by an enemy, a Mills bomb will effectually settle the question. Or, if one is fortunate enough to discover the location of an enemy machine gun, much satisfaction can be derived from the experience of sneaking up and poking one of these little jokers in through the firing port-hole. In house-to-house fighting and in advancing along a trench, they are indispensable and during the process of "mopping-up," much time is saved by the simple expedient of pulling the pin and tossing a grenade into each dug-out with the invitation to the occupants to "divide that up among you." For the seeker after thrills, I can recommend the experience of being one of a bombing party on a night raid. After you have arrived within throwing distance of the position to be attacked, you commence heaving 'em over. Soon the other fellow gets going and you find yourself in the midst of a crashing inferno of fire and flying missiles. In trying to throw a bomb your hand hits an unseen strand of wire and the bomb drops—somewhere within a few feet, but you don't know where. You "flop" quick and hope the pieces will all fly over you but can't get away from the fact that you may be lying right on top of the thing. Interesting, what? Yes, hand grenades are very useful weapons but, as above noted, they can not be used in the final *melee* as, once the firing pin has been released, they know not friend from foe.

Now, as to the bayonet. The present practice is for every man who is armed with a rifle to have the bayonet "fixed" at all times when in front line positions. Strict insistence upon this has sometimes brought about entirely unexpected results as, for instance, on the occasion of their first trip to the front, one of our battalions was required by its commanding officer to fix bayonets before entering a communication trench which crossed a mile or so of comparatively level ground under direct observation from "Germany." Now this trench was plenty deep enough so that neither the heads of marching men nor their rifles, carried slung in the usual manner, were visible to the enemy but the addition of more than a foot of nice, new, shiny bayonet, made a display of brilliant flashes that could be seen for miles, with the result that the German artillery mauled them to a frazzle before they could get under cover. Speaking for myself and my immediate associates: we always considered the bayonet as an unmitigated nuisance—that is, attached to *(Concluded on page 20)*

A Shoot Without a Shot

By Henry N. Marsh

IS the club interest lagging? Do you find a lot of difficulty getting new members? Would you like to get a lot of people interested in the shooting game and make your club go big? Then listen to me, and I will try to tell you how they do it up in Bagdad-on-the-Subway.

First, let us relate a little history. Back in February, 1924, some members of the New York Central Athletic Association, Manhattan Chapter, staged a shooting smoker and they had a good crowd and a good time but they didn't think that the crowd was as large as it should have been and when they were planning the party that I'll try to tell you about, they decided in favor of a number of changes to increase the interest. And now take a look at the handbill that will give you some idea of the sort of program they fixed up. Maybe it doesn't interest you but it brought out a whopper of a crowd. Over five hundred people paid to get in to the show.

This "Grand Thanksgiving Carnival" was staged in the Recreation Hall of the New York Central Building, 466 Lexington Ave., New York City on Friday evening, November 20. The program included some excellent vaudeville acts as a preliminary to and a drawing card for the shooting and athletic events that were to follow.

The vaudeville program was arranged to have an appeal to sportsmen as well as the general public and was opened by a wonderful double quartet of the Swedish Singing Society "Lyran" who rendered several stirring songs and were followed by the Campbell Troupe in Scotch and Irish songs and dances. While the work of the entire troupe was excellent the crowd took particularly to the performance of little Margaret Campbell who danced and as an encore rendered several of the songs that we have all come to know through the performances of Sir Harry Lauder. One of the Pullman porters livened up the program with a couple of selections on the ukele and harmonica and then an artist appeared who certainly was popular with the New York Central crowd. Miss Eleanor Carr, a beautiful little girl of about eight years who displayed really remarkable ability in a number of acrobatic and eccentric dances. One of the shooting clan, Wm. Keighley, displayed his versatility by singing two very sweet songs.

The athletic part of the program was opened by some spectacular fencing between Philip Farley and Denis Bencoe of the N. Y. A. C., and then came the surprise of the evening. The balance of the program was to consist of talks and demonstrations of fancy shooting by such men as Karl Frederick, Col. R. H. Sayre, Dr. I. R. Calkins, Col. Jones, Mr. Fitzgerald of Colts, Louis Maurer, Harry Pope, Arthur Hubalek, Charlie Johnson, Bill Tewes, Larry Corsa, Jack Hession and others. Then they were going to stage a turkey shoot using the Colts "Fitz Luck" target and the Webley Air Pistol. The chairman of the committee, Jos. Martin, had everything fixed up to run smoothly—so he thought—but about the time the shooting part of the program was to start, two big burly policemen arrived from the local precinct headquarters and announced to Martin that the "house would be pinched" if any shooting took place. They would not even permit the use of the Webley Air Pistol with its enormous muzzle velocity of 350 foot seconds and its massive projectile of 8 grains.

For the moment the committee was stumped but was determined to make the affair go over big. So Karl Frederick was introduced and gave an interesting talk on the development of the pistol from the match guns up to the time when the flint lock went into the discard and illustrated the talk with specimens from his museum collection.

Dr. I. R. Calkins, President of the U. S. Revolver Association, explained the purpose of that organization and made a plea for greater proficiency with the revolver, not only for the sake of one's own protection and as a matter of national defense but because it was one of the cleanest of all sports and when a young man becomes interested in pistol shooting and wants to become really proficient, he has to live temperately, go easy on smoking and drinking and generally behave himself.

Joe Martin then introduced Louis Maurer, former President of the Zettler Rifle Club, and the oldest man still actively interested in the shooting game—over 94 years old—and presented Mr. Maurer with a bouquet of his favorite flowers.

Charlie Johnson was next called up on the platform and his ability with a rifle outlined and then Martin told a good story on him about the Marine at Perry who had a monkey which Charlie wanted the worst ever and how Charlie used to follow the Marine around. The only reason Charlie didn't buy the monkey and take him home was the fear that his wife would throw both of them out. Martin then presented Charlie with a marvelous cat that rolled its eyes at Charlie and emitted sounds of feline approval.

Mr. Martin then introduced Major John J. Dooley as representing the Marines, and after a few appropriate remarks about the Marines and their shooting ability, Major Dooley called to the platform and introduced to the crowd a number of the visitors present who are more or less well known to the shooting fraternity. The aggregation on the platform included Louis Maurer, Harry Pope, Arthur Hubalek, Commander Lee, U. S. N., Jack Hession, Dr. I. R. Calkins, Karl Frederick, Jacob Saylor, one of the instructors of the New York City Police, Col. Jones, Pistol Instructor of the New York State Troopers, Fitzgerald of Colts, Paul Landrock, Leo Manville, Capt. Joe Portugal, Mr. L. C. Weldin and Capt. Henry N. Marsh of the Hercules Powder Co. and the chiefs of the N. Y. C. and the D. & H. Police, and Major Dooley asked the crowd if this bunch of gunmen looked like "bad actors."

The platform was next turned over to Fitz who demonstrated some of the fine points of quick draw and also how to disarm a man who tries to hold you up. He also showed a Colts silhouette Target used in his system of police instruction with the vital areas laid off and the best places to put a shot to disable but not kill a man whom an officer is trying to arrest. He stressed two points in his system of instruction that most police officers seem to overlook and that is that you can't hit anything while running except by accident, and that it isn't the man who gets his gun out first who does the most damage, but the one who can place a shot just right and reasonably fast that brings home the crook. In his system of instruction he starts with quick fire, while in the scheme of instruction used by Col. Jones who spoke next, a man must become proficient in slow fire first and then his speed of fire is gradually increased.

Col. Jones referred to the crowd of shooters who had been on the platform a few minutes before, and stated that any one of them could outshoot the best shot amongst the bandits in New York City, and made some very pertinent remarks about the laws which prevent reputable citizens from owning guns for their own protection.

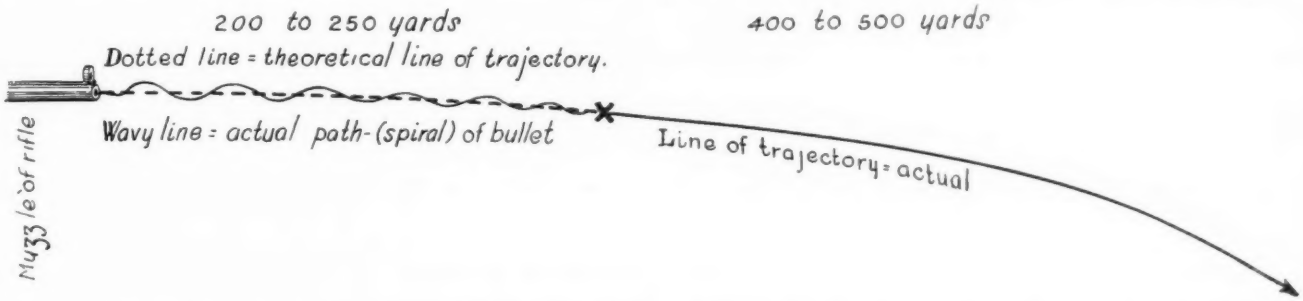
The big problem before the committee now was how to give the crowd what had been promised them in a turkey shoot for a very large live gobbler who adorned the stage. For a time it was thought that the best plan would be to open the crate and give him a boost into the air and let the person who recovered him have him. There were other prizes and since it was supposed to be a shoot, it was decided that the targets would be distributed through the audience and each person would write his name and address on the back and the targets would be taken out into Westchester County and be fired by one man and the high score would get the turkey. This was the best plan possible as they were luck targets anyway and the man firing would not know whose target he was firing. In the meantime the turkey was put out to board at a neighboring livery stable until the owner could be determined.

There had been provided a very nice handbag as the prize to the lady making high score and a Remington single shot .22 cal. for the boy or girl under sixteen years of age making high score so two targets were given to each woman and each boy and girl under sixteen years of age present. In each case one of these was marked "Turkey Target" and the other "Lady's Prize" *(Concluded on page 21)*

Bullet Gyration

By A. W. Waldron

THE term "flip" as applied to the motion imparted to the muzzle of a high-power rifle at the time of discharge, is a word that I dislike. It suggests to my mind a jump upward or sideways. I like the word "whip" much better. Why? Because whip suggests a circular motion and thereby sheds some light on what really occurs. The bullet emerging from a high power rifle barrel with its quick twist, is a screw—its threads having been cut by the barrel lands. Now let us see what happens when it starts joyously forth on its journey. As it is leaving the muzzle it rotates rapidly in the direction of the rifling; and as it leaves the muzzle it also imparts to the muzzle a rotation in an opposite direction. Now the lighter the barrel, the quicker the twist ratio, the greater the muzzle velocity and the heavier and harder the projectile — the greater is this muzzle whip. Naturally this whip is a circular or really a spiral motion. The bullet is just a screw, remember, emerging under tremendous pressure from the barrel. In other words, the projectile (screw) and the die in which it was cut (barrel) are just blown apart in practically opposite directions by the powder gas. If the gun and projectile were of equal weights and bulks they would theoretically go in opposite directions at similar velocities, wou'dn't they? Yes, but did you ever stop to think if this were the case, how they would revolve in opposite directions and how violent would be the spiral motion or whip with which they parted company?


200 to 250 yards
400 to 500 yards
Dotted line = theoretical line of trajectory.
Wavy line = actual path-(spiral) of bullet
Line of trajectory = actual
Muzzle of rifle

Now, we know that the motion of a barrel muzzle influences the direction of the projectile for a short distance after the projectile has left the muzzle. This motion increases the whip of the projectile. The accompanying blast of powder gas, I presume, still further increases this spiral motion imparted to the projectile at the moment of its emergence. Well, to resume, the projectile is on its way. It is revolving very rapidly on its axis. Yes, and it is also *not* following its line of trajectory as stated in the table. No, for while that so-called trajectory is a smooth curving line, the actual flight of the bullet is a spiral around the said line of trajectory, the trajectory line being merely the average of this spiral for the first four to five hundred yards of the bullet's flight. The whip carries the bullet around and around this line of theoretical trajectory in an increasing spiral: above, to the right, below, and to the left of that line. This spiral reaches its maximum deviation from the line of theoretical trajectory at say two hundred to two hundred and fifty yards and then begins to decrease and continues to decrease until at four hundred to five hundred yards the projectile in its flight has lost its spiral motion, has "settled down," is spinning truly on its axis and making its greatest forward velocity. Yes, making its greatest *forward* velocity because it is no longer wasting distance by circling its line of trajectory. Its line of flight is now identical (for the first time in its career) with its theoretical line of trajectory. Certainly it has not now the actual velocity it had when it left the muzzle; but it has more forward progression in its course because it is no longer wasting energy by pursuing a spiral path.

This brings us to the analogy between a high-velocity rifle ball in flight and a spinning top. A happy thought, that! And one for which I have blessed several gentlemen who have written very able and scientific articles on ballistics in THE AMERICAN RIFLEMAN.

The top—now, what does a top really do when started spinning on a smooth flat surface? First circles round and round in first steadily increasing and then decreasing rings (a spiral) until its axis straightens up to the vertical and then it spins steadily in one place (analogy, high power rifle at say 400 yards)—continues so until its momentum is nearly exhausted, then begins to wobble like a spent bullet of small diameter and great length, and finally wobbles erratically (keyholes) and falls.

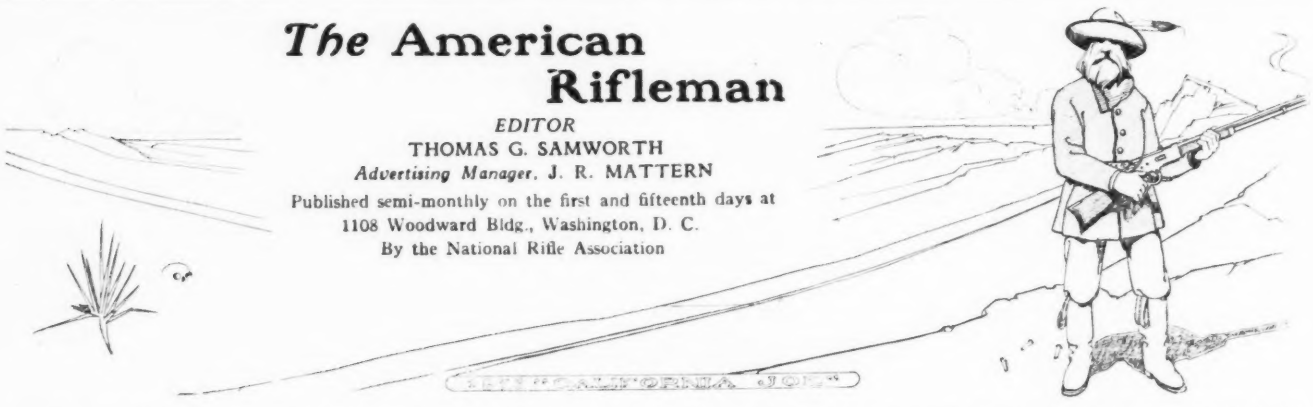
Herein lies the great difference between the high power rifle and the old low power rifle. Trajectory curves as we see them diagramed are O. K. for the old low pressure loads, but obsolete (I believe) inside of the first 400 yards for the new type of high power projectiles of hard substance, propelled at high velocity from a rapid twist bore. Unless we consider the trajectory curve above referred to for the first 400 yards, as merely representing an average position of the bullet in flight. If the high power rifle bullet's rotation is clockwise, the whip of the muzzle is anti-clockwise—opposite to the direction of the bullet—and this again increases the "whip" of the bullet. Does this whip or spiral path traversed by the bullet affect its accuracy inside of say 400 to 500 yards? In some of the light weight high velocity rifles it affects it very greatly. Have you never had the experience when "sighting up" a light high power rifle that it shot higher at say 200 yards than at 175 yards? You blamed that on errors in holding or on the ammunition, didn't you? Said it *couldn't* be that the ball was higher at 200 than at 175 yards—contrary to the principles of ballistics, etc.? Yes, but it *was*. That ball was actually higher at 200 yards than at 175, because at 200 it was at the top of its spiral path and at 175 at its bottom.

What is accuracy, anyway? If it is simply uniformity of shooting then the best of the high power rifles have it to perfection. Particularly is this true at the longer ranges. But if accuracy at the shorter ranges means having the bullet fly in a straight line (vertically) from the muzzle of the rifle to the mark (I am not considering drift) then the old muzzle loader squirrel rifle even, has it all over the best of the new high power rifles. Certainly the high power bullet is revolving on its axis from the time it leaves the muzzle until its extreme limit of accurate range is attained. But under the most favorable of conditions and where wind is not an influencing factor at ranges from 50 to 100 yards, has the high power bullet which is rotating very rapidly in its axis and gyrating as well, any advantage in accuracy over the bullet fired from the best of the old muzzle loading rifles which is rotating slowly and not gyrating appreciably? I think not.

What then, speaking ballistically, and not considering range and power, is the most marked difference between the new high power and the old low power rifles and loads? My answer is that next to velocity it is gyratory motion. That is *new* even if not generally appreciated. Bullet gyration with the old black powder rifles was a *(Concluded on page 21)*

The American Rifleman

EDITOR
THOMAS G. SAMWORTH
Advertising Manager, J. R. MATTERN
Published semi-monthly on the first and fifteenth days at
1108 Woodward Bldg., Washington, D. C.
By the National Rifle Association



The period following the Civil War marked the rapid filling up and settling of the West. A common character known in innumerable localities was "California Joe," a name applied to every old moss-back and rough-neck who at one time or another had been (or said he had) to the Sierras. Many a successful one-man medicine show of the day had as its sole drawing card California Joe, together with his wonderful Indian Liniment or Snake Oil, and the story of how he acquired their marvelous formulae.

THE position taken by THE AMERICAN RIFLEMAN in the present aircraft controversy and the editorials and articles which we have presented to our readers to date have excited a great amount of comment. An overwhelming majority of the letters received in this connection have complimented us upon the stand we have taken, but a few individuals have strongly objected to our attitude, claiming it is at variance with the position taken by the press at large, and asking why this publication should interest itself in a controversy which, in their opinion, is of no interest to riflemen.

Apparently we did not make ourselves clear in our editorial of September 15, as to the position of THE AMERICAN RIFLEMAN in the aircraft controversy. We, therefore, repeat that no rifleman can fail to be interested in the claims for the power of aircraft, and no rifleman's organization can afford to ignore the statements which are continually appearing in the press on the side of aircraft, for if these statements are true, the rifle and the man who carries it are no longer the decisive element in war.

Where We Stand

While we feel that our readers are capable of forming their own opinions and drawing correct conclusions from the facts, yet we realize they are not in position to know the facts. Public opinion is now on the side of aircraft because public opinion is necessarily based on press reports, which are notoriously written for the sensational value regardless of the truth. And in the present instance they were worse than usual.

We know that in attempting to portray the other side of the story we are taking the unpopular side. We are not picking on the under dog for the under dog at present is the Army and Navy, as the hero of the air is now riding or rather flying high.

Nine-tenths of our readers did not know or realize until articles or editorials in THE AMERICAN RIFLEMAN told them that air craft bombs sunk no battleships during the World War; that anti-aircraft fire did bring down planes (Baron Richtofen, the most famous German ace, was killed by anti-aircraft rifle and machine gun fire); and that we have at least one thousand serviceable planes which, according to General Patrick, the Chief of Air Service, are as good as those possessed by any other nation.

In presenting the other side of the picture, we do not feel that we are acting as prosecutor, judge and jury of General Mitchell. We are satisfied that General Mitchell will get a fair trial from the court. This can not be said of the treatment the court is getting from the press, as the following paragraphs from an editorial in the Syracuse, N. Y. *Telegram* of November 3, which was syndicated all over the country, will show. It was broadcast under the heading, "A Disgraceful Trial":

"Two of the important, high-sounding generals that were to try Mitchell have been put out of the case, for good reasons. Good riddance thus far. Crowds that gather cheer Mitchell to prove they are with him. They show common sense and patriotism.

"The entire trial is a disgrace to the Army, the Administration and the Government.

"A brave officer, who showed his courage flying and fighting in France when men that now try him were loafing in the United States, had the courage to tell the truth about the country's danger, caused by idiotic management of national aircraft.

* * * * * *

"The trial is annoying to the common sense of the citizens. But it will do good. It proves to the people of the United States what perhaps a few of them didn't know, that the management of their Army and their Navy is miserably incompetent, a discredit to the whole country and a great danger if anything should happen to this rich, fat, well-stuffed United States of America."

This quotation has been characterized by the *Army and Navy Register* of November 14 as follows:

"For venomous expletive, concentrated ignorance, and vicious diatribe there has been nothing to surpass this quotation in all that has been written and printed about the Mitchell case. For lack of truth, justice, ordinary common sense and plain decency, this editorial might have been written, with advantage to its composition, by the village idiot."

As a matter of fact, the officers of the court have distinguished themselves in battle in the World War, and their decorations compare favorably with General Mitchell's.

We feel that we owe a duty to all riflemen to give them the side of the Army and the Navy in this case, as apparently in no other way will they get it. We have not anticipated the decision of the court as to whether General *(Concluded on page 19)*

Entered as second-class matter, April 1, 1908, at the postoffice at Washington, D. C., under Act of Congress March 3, 1879. Obtainable by subscription, $3.00 per year. $2.00 to individuals or members of clubs affiliated with the N. R. A. Canadian subscription, $3.50. Foreign, $4.25.
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A Short Cut to Exterior Ballistics

By Edgar Bugless and Wallace H. Coxe

Ballistic Engineers of the E. I. Du Pont de Nemours & Company

Part III. The Determination of the Remaining Velocity

AS THE coefficient of form and the ballistic coefficient have been determined from Drawings Nos. 1 and 2, the remaining velocity over any certain range corresponding to a given muzzle velocity can be determined from Drawing No. 3. As in the previous drawings, Drawing No. 3 has an example worked out in detail to illustrate the use of the nomograph.

At first glance the function Z may appear somewhat difficult to handle on account of two scales being shown on this line. This particular nomograph, however, was made with the effort to eliminate calculations for Z and necessitates the combining of two curves into one for this purpose, consequently the Z line has to be used twice. The construction of this nomograph will be discussed later on but for the general reader it will suffice to say that the functional values of the velocities have been eliminated by substituting the direct values of the velocities.

The reader will also notice that the value of the ballistic coefficient C has been reduced from the limits of 3.39 and .00915 shown on Drawing No. 2 to 1.37 and 0.09 in Drawing No. 3. The reason for this is that 1.37 and 0.09 represent the practical limits for the ballistic coefficient and it was unnecessary to draw this line longer as it would make the nomograph larger in size so that when reduced to the printed page it would have been more difficult to read. The other limits of the table cover the same range of bullets as in the previous drawings.

In the example given in the drawing, the problem consists of finding the remaining velocity for a given muzzle velocity. However, the drawing can be used to find the muzzle velocity for any given remaining velocity as it is only necessary to reverse the procedure followed as given in the illustration. As a matter of fact, the known and unknown values in any of the drawings can be reversed.

Let us assume a problem in which we wish to determine the value of i, the coefficient of form. In this problem we will assume that the muzzle velocity and the remaining velocity are known and we wish to determine what particular shape of bullet will meet these known velocities. To do this it will also be necessary to assume values for the diameter of the bullet and the weight of the bullet. From Drawing No. 3 the value of Z is determined from the known values for the remaining and muzzle velocities. From the value of Z we can then determine the value of C, the ballistic coefficient. By referring this value of C to Drawing No. 2 and using our assumed values for the diameter of the bullet and the weight of the bullet we can then determine the value of i. This value of i is then referred to Drawing No. 1 and the ogive of the bullet can be determined which will meet the requirements of this problem.

As explained above, the actual construction of this nomograph varied somewhat from the construction of Drawing No. 2 and for the interest it may afford the technical reader the following description is given.

The nomographic chart for determining remaining velocity depends upon a solution of the formula $S_u = Z + S_v$.

Where $Z = \frac{x}{c}$ = Horizontal range in feet for a standard projectile having a Ballistic Coefficient (C) = 1

S_v = Primary function corresponding to a certain muzzle velocity

S_u = Primary function corresponding to a certain remaining velocity

and is in reality two charts combined in one.

The function Z in the formula is equal to $\frac{x}{c}$ or is equal to the horizontal range in feet divided by the ballistic coefficient. This function reduces the given range of any caliber, shape, or weight of bullet to the equivalent range an assumed standard projectile would traverse under similar conditions. In Ingalls' Tables, Z is the actual horizontal range in feet where the Ballistic Coefficient of the assumed standard projectile equals unity. Thus far, Z has not appeared in any of the formulas, but in this formula and in succeeding formulas, the value of Z plays an important part. Therefore, the first section of the chart under discussion consists of a solution of the formula, $Z = \frac{x}{c}$, which is laid out and plotted in a manner similar to the chart for Determination of the Ballistic Coefficient which has been explained in the preceding issue. The values used and the distances between the axes are shown on Table No. 3A.

It will be noted on the chart that the **X** axis between the values 1800 and 3000 projects below the level of the other axes. This can be disregarded in plotting the chart, since the addition was made after the original chart had been completed.

The second section of the chart, which is a solution of the formula $S_u = Z + S_v$ after Z has been defined in terms of X and C, cannot be solved logarithmically due to the appearance of the plus (+) sign in the formula. This necessitates a different method of plotting. In this chart, as in the preceding ones, limits are chosen for the variables.

C = .09 to 1.37 X = 1 to 1800

Therefore $Z = \frac{x}{c} = \frac{1}{1.37} = .73$ at the low limit

and $= \frac{1800}{.09} = 20000$ at the high limit.

Muzzle Velocity = 500 to 3500.

But muzzle velocities are not expressed in foot seconds in the formula, therefore it is necessary to use the functional values as given in Ingalls' Artillery Circular "M."

Hence $S_v = 25537.6$ for a muzzle velocity of 500 foot seconds

And $S_v = 274.4$ for a muzzle velocity of 3500 foot seconds

Substituting in the formula for both limits $S_u = Z + S_v = .73 + 274.4 = 275.13$ and $20000 + 25537.6 = 45537.6$.

The actual remaining velocities corresponding to the functional values just determined are taken from Artillery Circular M where we find. *(Concluded on page 18)*

Table No. 3A

TABLE OF VALUES USED IN CONNECTION WITH FORMULA $S_u = Z + S_v$ IN CONSTRUCTING ALIGNMENT CHART FOR THE DETERMINATION OF MUZZLE OR REMAINING VELOCITIES THROUGH A SOLUTION OF THE FORMULA $Z = \frac{X}{C}$

Where Z = Horizontal Range in Feet for a Standard Projectile Having a Ballistic Coefficient (C) = 1

X = Horizontal Range in Feet.

C = Ballistic Coefficient.

Name of Axis	Symbol	Number Limits	Log. Limits	Log. Difference	L	Actual Length	Scale Number	Equivalent Scale	Scale to Use
Range in Feet	X	1—1800	0—3.25527	3.25527	5	16.276	2	2	20
Ballistic Coefficient	C	.09—1.37	$\bar{2}$.95424—.13672	1.18248	10	11.825	1	1	10
Horizontal Range for C = 1	Z	.73—20000	$\bar{1}$.86332—4.30103	4.43771	3—1/3	14.78	3	3	30

C — X = 15" Z = 1/3 x 15 from X = 5" from X axis

Chart for Determining Remaining Velocity

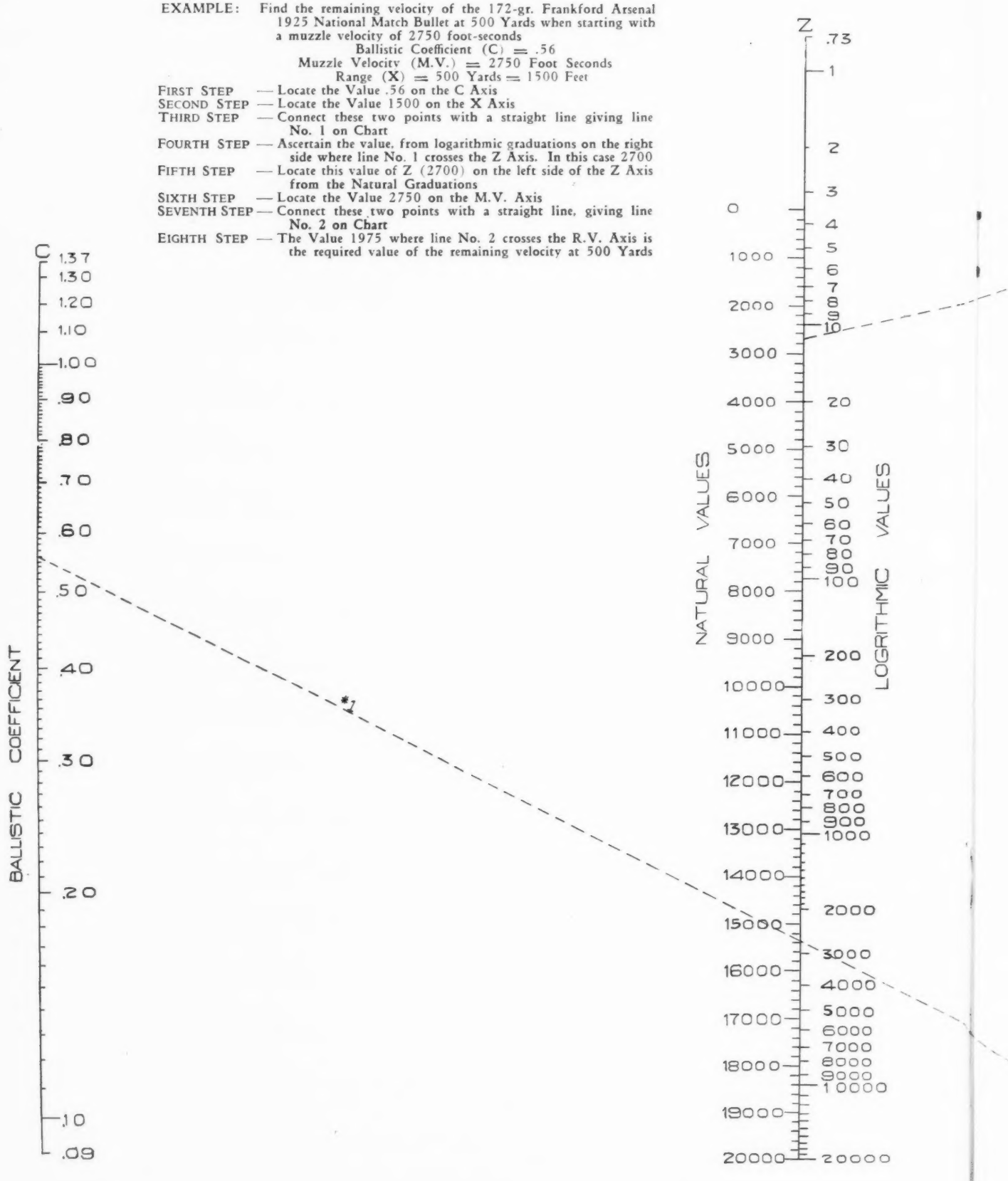
for any range from 1 to 3000 feet

GIVEN: Ballistic Coefficient (
Range in Feet (X)
Muzzle Velocity in
(M.V.)

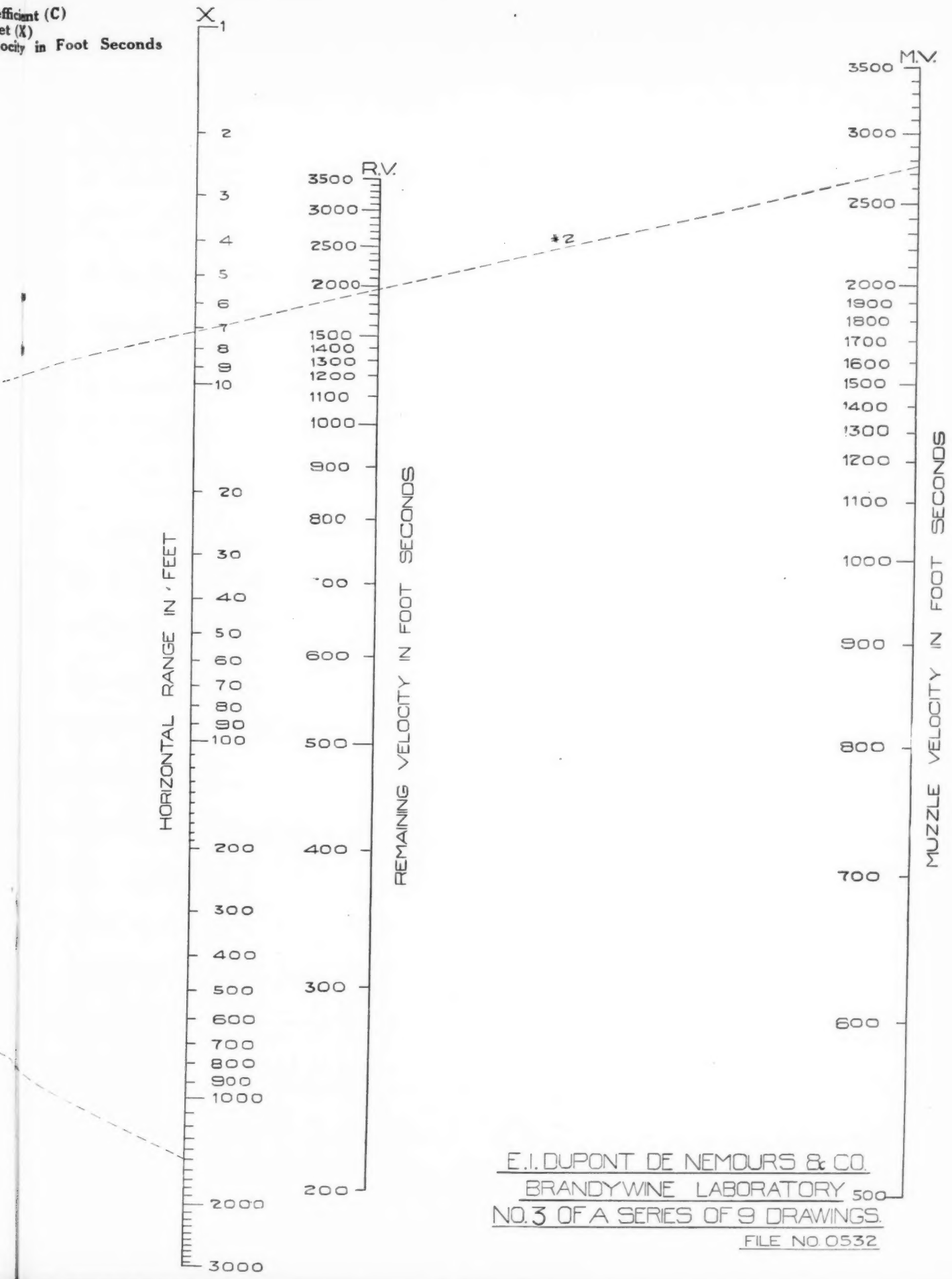
EXAMPLE: Find the remaining velocity of the 172-gr. Frankford Arsenal 1925 National Match Bullet at 500 Yards when starting with a muzzle velocity of 2750 foot-seconds

Ballistic Coefficient (C) = .56
Muzzle Velocity (M.V.) = 2750 Foot Seconds
Range (X) = 500 Yards = 1500 Feet

FIRST STEP — Locate the Value .56 on the C Axis
SECOND STEP — Locate the Value 1500 on the X Axis
THIRD STEP — Connect these two points with a straight line giving line No. 1 on Chart
FOURTH STEP — Ascertain the value, from logarithmic graduations on the right side where line No. 1 crosses the Z Axis. In this case 2700
FIFTH STEP — Locate this value of Z (2700) on the left side of the Z Axis from the Natural Graduations
SIXTH STEP — Locate the Value 2750 on the M.V. Axis
SEVENTH STEP — Connect these two points with a straight line, giving line No. 2 on Chart
EIGHTH STEP — The Value 1975 where line No. 2 crosses the R.V. Axis is the required value of the remaining velocity at 500 Yards



efficient (C)
et (X)
ocity in Foot Seconds



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FILE NO. 0532

Exterior Ballistics

(Concluded from page 15)

When $S_u = 275.13$ Remaining velocity = 3500 f.s.

When $S_u = 45537.6$ Remaining velocity = 200 f.s.

Therefore each axis will be graduated as follows:

Z axis—.73 to 20000

Muzzle Velocity axis—500 foot seconds to 3500 foot seconds

Remaining Velocity axis—200 foot seconds to 3500 foot seconds

However, it must be remembered, that the remaining velocity and the muzzle velocity axes cannot be plotted at once in terms of feet per second as the formula uses Ingalls' functional values S_u and S_v.

To unite the first and second sections of Drawing No. 3 in order that the drawing may be read easily, it is necessary to use a line common to each of the formulas used. The Z axis is chosen as this value appears in each formula. When this Z axis was plotted in the first section it was graduated logarithmically on one side, but the logarithmic values cannot be used in the second section. That is, the same Z line can be used for each formula but the graduations must be different. Hence, natural values were used for the second section.

Parallel to the Z axis at a convenient distance to the right, in this instance 15 inches, the M. V. axis was erected, then the Z axis was graduated between the values 0 and 20000 at the rate of A units per inch, A being so chosen that the scale for M.V. and the scale for R.V. was not inconveniently long or short.

In the remaining velocity chart the starting point of the natural graduations on the Z axis was located by the logarithmic graduation of the value 20000, and the unit graduation A was made 1600 per inch. In a similar way the M.V. axis was graduated between the limits of S_v from 275 to 25538 at the rate of B units of 1600 per inch. Now it may be shown from geometry that if each value of R.V. is to be in the same straight line with corresponding values of Z and M.V. on the other two axes, then the distance m from the Z axis to the remaining velocity axis must be such that $m = \frac{Bn}{A + B}$, where n = distance between Z and M.V. axes, in this instance arbitrarily made 15 inches. Therefore, substituting in the formula, the distance m between the Z and R.V. axes = $\frac{1600 \times 15}{1600 + 1600} = 7.5''$. Also, the R.V. axis must be graduated at the rate of C units per inch. Where $C = A + B = 1600 + 1600 = 3200$. The Remaining Velocity axis was therefore graduated between the limits of S_u from 275 to 45538 at the rate of C units of 3200 per inch. After the M.V. and the R.V. axes were graduated in terms of the primary functions S_v and S_u respectively, actual velocity values at intervals of 100 foot seconds corresponding to the primary values were plotted, and the primary value graduations erased, leaving the axes graduated directly in foot seconds. Table 3B contains the values used in plotting the second section of the chart.

Table No. 3B

TABLE OF VALUES USED IN CONNECTION WITH FORMULA $Z = \frac{X}{C}$ IN CONSTRUCTING ALIGNMENT CHART FOR THE DETERMINATION OF MUZZLE OR REMAINING VELOCITIES THROUGH A SOLUTION OF THE FORMULA

$S_u = Z + S_v$.

Where Z = Horizontal Range in Feet for a Standard Projectile Having a Ballistic Coefficient (C) = 1

S_v = Primary Function Corresponding to a Certain Muzzle Velocity.

S_u = Primary Function Corresponding to a Certain Remaining Velocity.

Name of Axis	Symbol	Number Limits	Units per Inch	Length of Axis	Scale to Use
Range in feet for Standard Projectile	Z	0-20000	1600	12.5″	16 graduations per inch
Muzzle Velocity	M.V.	275—25538	1600	15.8″	16 graduations per inch
Remaining Velocity	R.V.	275—45538	3200	14.15″	32 graduations per inch

Distance from Z axis to M.V. axis = 15 Inches

$M = \frac{Bn}{A+B} = \frac{1600 \times 15}{3200} = 7.5''$ from Z to R.V. axis $C = A + B = 1600 + 1600 = 3200$

Where M = Distance from Z to R.V. axis
n = Distance from Z to M.V. axis
B = Unit graduations per inch on M.V. axis
A = Unit graduations per inch on Z axis

Where C = Unit graduations per inch on R.V Axis
A = Unit graduations on Z axis
B = Unit graduations per inch on M.V. Axis

The occurrence of the plus sign in the formula $S_u = Z + S_v$ precludes a logarithmic solution and necessitates a natural graduation on one side and a logarithmic graduation on the other side of the Z axis on the chart, since the chart is plotted in conjunction with the formula $Z = \frac{X}{C}$ which can be solved by logarithms. This double graduation on the Z axis causes the user to switch from a logarithmic value to the corresponding natural graduation and thus tends to complicate the chart. The remaining velocity and the muzzle velocity axis have been simplified, however, by graduating them directly in feet per second, thus eliminating the functions S_v and S_u which appear in the formula.

In Part I of this series of articles a table was included which was offered as an example to aid in reading the curves. This table has now been expanded and is given below as Table No. 3C to include the values for C, the Ballistic Coefficient, and the remaining velocities at two different ranges as determined by Drawings Nos. 2 and 3. As explained before, the bullets were selected at random and are simply included to serve as an illustration of the use of the drawing.

Table No. 3C

Caliber	Bullet	Muzzle Velocity	Ogive	Dia. of Flat Nose in Calibers	From Drawing No. 1 Coefficient of Form	Diameter of Bullet	From Drawing No. 2 Ballistic Coefficient	From Drawing No. 3 Z 150 Ft.	From Drawing No. 3 Remaining Velocity at 150 Ft.	From Drawing No. 3 Z 300 Ft.	From Drawing No. 3 Remaining Velocity at 300 Ft.
.22 Long Rifle	R.A. 40-gr. Lead	1070	2	..	0.85	0.222	.137	1100	990	2200	930
.25-20 W.C.F.	R.A. 60-gr. Hi-Speed	2200	4	0.10	0.85	0.258	.152	990	1940	1975	1700
.25-20 W.C.F.	Peters 60-gr. Hi-Speed	2200	4	0.08	0.75	0.258	.172	870	1970	1750	1750
.25-35 W.C.F.	Peters 117-gr. Hi-Speed	1975	4	0.12	1.10	0.258	.228	650	1800	1300	1650
.250-3000 Savage	West'n 87-gr. H.P. Expanding.	3000	6	0.08	0.70	0.258	.267	560	2810	1120	2630
.250-3000 Savage	Western 100-gr. Lubaloy S.P..	2850	4	..	0.60	0.257	.360	410	2705	830	2580
.270 Winchester	W.R.A. 130-gr. Ex. P.	2700	8	...	0.49	0.277	.496	300	2600	600	2500
.30 Newton	West'n 180-gr. Lubaloy Ex. Pt.	2500	8	0.07	0.70	0.308	.385	390	2380	780	2280
.30-06 Spld.	R.A. 110-gr. Hi-Speed	3500	6	..	0.70	0.308	.237	625	3270	1260	3050
.30-06 Spld.	Western 150-gr. Lub. Ex. P.	2700	6	0.10	0.70	0.308	.323	470	2545	925	2410
.30-06 Spld.	R. A. 180-gr. Hi-Speed	2700	8	..	0.49	0.308	.560	270	2600	540	2520
.30-06 Spld.	Western 180-gr. Ex. P.	2700	6	0.10	0.70	0.308	.385	390	2575	780	2460
.30-30 W.C.F.	Peters 170-gr. M.C.S.P.	2000	1.5	..	1.00	0.305	.261	575	1850	1150	1710
.30-40 Krag	W.R.A. 220-gr. M. C.	2000	1.5	..	0.95	0.308	.348	425	1885	865	1780
.32 Colt Auto.	R. A. 71-gr. M.C.	825	1	..	1.10	0.312	.095	1600	765	3150	710
.32 W.C.F.	W.R.A. 80-gr. Super-Speed	2000	4	..	0.75	0.311	.158	940	1760	1890	1550
.32 Win. Spl.	R.A. 110-gr. Hi-Speed	2550	6	0.10	0.70	0.321	.218	690	2340	1370	2160
.32-40 W.C.F.	W.R.A. 165-gr. M.C.S.P.	1600	3	0.17	1.10	0.320	.209	710	1360	1425	1240
.35 Rem.	Western 200-gr. Lub. Ex. P.	2000	4	0.10	0.75	0.359	.296	510	1870	1010	1750
.38-55 W.C.F.	Peters 255-gr. M.C.	1700	2	0.20	1.25	0.376	.205	725	1535	1450	1395
.40-65 W.C.F.	R.A. 260-gr. Lead	1420	2	0.22	1.25	0.405	.180	830	1275	1650	1160
.40-70 W.C.F.	R.A. 330-gr. Lead	1380	3	0.22	1.15	0.405	.248	600	1280	1200	1190
.40-90 Sharps	R.A. 370-gr. Paper Patch	1400	1.5	0.18	1.25	0.405	.257	580	1295	1160	1205
.45-70 W.C.F.	R.A. 405-gr. Lead	1360	1.5	0.20	1.25	0.459	.219	675	1245	1360	1160
.45-70 W.C.F.	W.R.A. 300-gr. M.C.S.P.	1890	1.5	0.25	1.35	0.456	.153	975	1660	1950	1460
.45-90 W.C.F.	W.R.A. 300-gr. Lead	1550	2	0.25	1.25	0.458	.162	920	1365	1840	1220

Where We Stand

(Concluded from page 14)

Mitchell is guilty of conduct to the prejudice of good order and military discipline. We have our own ideas as to what we would do if the office boy came in and told us what a "dumb bell" we were, even if we had a guilty feeling that there might be something in what he said. We also know what every reader of this editorial would do if a man whom he was employing was so indiscreet as to really tell the boss that he was a "washout" as an employer.

However, we started our campaign of education before the Shenandoah disaster, and the outcome of the present trial is immaterial to a correct presentation of the other side of the story.

As to waiting till the Air Board renders its report, and the court comes to a decision, we believe that it will then be too late. Public opinion is being formed now and although we do not flatter ourselves that we can affect the vast mass of people, we, at least, can give our own readers a truer picture than they would otherwise get. If the Air Board recommends against General Mitchell's claims, and the court finds him guilty, we certainly would be accused of persecution if we continued to show up the falseness of his claims. On the other hand, if the final outcome is in his favor, it would be useless to continue the discussion.

Again we repeat that this controversy affects every citizen and particularly every rifleman, and that we propose to tell the truth whether it hurts or not. We believe in the Army and Navy Air Services, but we do not believe in the "tommy rot" which is continually being published as to our defenseless position in the air, and our helplessness among the Military and Naval Powers.

As a justification of our course we need only print extracts of the written statement to the President's Aircraft Board, which was submitted by Major B. Q. Jones, a distinguished officer of the Army Air Service, who has had more continuous active service in aviation in the Army than any other one officer, except one. This statement has been given comparatively no publicity, although it is to the effect that our Air Service is superior to that of any other Nation.

Extracts of Major Jones' statement:

Motive Behind Agitation

"The fundamental motives behind this whole agitation for a separate air corps are:

"First. Desire for more rapid promotion.

"Second. Hopes of early retirement so as to be able to lead an independent existence.

"Third. The natural human desire to be for once in their lives upon the top of a new idea that will carry them along to high positions, realizing, as most of them do, that this may be their only real opportunity in life to get something in a hurry.

"The fundamental troubles with the Army air service itself are:

"First. The tendency of all flyers to place themselves upon a pedestal of 'I am a flyer,' with the result that the feeling has been developed that they must be given special consideration, with the consequent development of individualism and an attitude of none too much respect for those who are nonflyers and who are not participating in their risks.

"Second. The human tendency on the part of flyers to segregate themselves into a special fraternity and create a special caste.

"Third. The development of cliques among air service officers and its ruinous effect upon impartial administration.

"Fourth. The use of 'grapevine' and personal channels to attain their private ends.

"Fifth. The development of bureaucracy in the office, chief of air service, and the evasion of the spirit of the 'Manchu law.'

"Sixth. The policy which allows detailing junior officers (lieutenants and captains) in the office, chief of air service, to administer the affairs of aviation.

"Seventh. The low standard of professional flying ability on the part of a great many air service officers.

"Eighth. The incubus of impostor flyers.

"Ninth. The lack of discipline in the air service.

"Tenth. The general attitude of disloyalty to the Army.

"Eleventh. Full use has not been made by the air service of the latitude given it by the War Department to train its personnel, to develop tactical organizations, and in the administration of its own affairs. The favoritism which the air service has enjoyed is best illustrated by the fact that, while the whole Army suffered a cut of 4.65 per cent, or $5,603,773.67, in the funds appropriated for the fiscal year 1926, as compared to those for the fiscal year 1925, the air service funds actually increased 10.87 per cent, or $3,585,571.20."

* * * *

"A typical illustration of the attitude of a great many air service officers was evidenced by one officer who testified before this committee and evaded a question put to him as to whether or not he considered himself both an aviator and an Army officer, leaving the impression with the board that he was not an army officer and that military aviation was so entirely removed from military matters that one did not need to be an Army officer to be a military aviator.

"Also this same officer made the statement that the purpose of the air service was to protect the Army. Such a statement only evidences the ignorance of air service officers of the true role of military aviation. It is only necessary to cite the case of the little value of aviation in the Riff war to show that military aviation is but an adjunct and is not a substitute for the Army. The reason airplanes have been of no material value in the Riff war is simply that 'you can not hunt ants with eagles.' It is the ground troops of the French army that are the backbone of France's offensive against the Riffs."

* * * *

"In order to correct impressions which the public must have gathered from certain statements in the press as to the air service having practically no equipment for war, I wish to set forth just what the situation is.

"Based upon the report of airplanes on hand in the air service in the standard and substitute for standard classes only, and only considering those in commission and in service, we had a total of 1,000 airplanes, of which 798 were actually flying and 202 in reserve, but which could be placed in fly condition within anywhere from 24 hours to two months, depending upon the stress placed upon the repair work.

"Now of these we only require to initially equip our authorized number of pursuit squadrons a total of 144, while we actually have on hand 159, with 45 more on order to be delivered in the immediate future. Therefore we have actually a surplus over the needs of the tactical pursuit squadrons of 15, with a possibility in the near future of 60.

"Similarly, our authorized observation squadrons only require an initial equipment of 142 observation planes, whereas we actually have on hand in the two classes named above 769 with 85 more on order, or an excess of 627, and with those on order an excess of 712.

"For bombardment, we need 72 bombing airplanes, but we have on hand 97, or an excess of 35.

"For the authorized attack squadrons, we need 32 attack airplanes, of which we have none on hand. However, a very successful adaptation of observation airplanes has been made for attack use. Therefore, it would be very easy to adapt some of the 627 excess observation airplanes for attack purposes.

"Now it is desired also to make a little comparison between the French air service and ours.

"As far as I can understand from the meager information furnished me, the French pursuit squadrons are equipped with airplanes of only 300 horsepower, with a high speed of 140 miles, and a service ceiling of 16,000 feet. The MB-3 airplanes, which were long ago relegated by the air service to the substitute for standard class, are equipped with 300 horsepower motors, with a high speed of 152 miles, and a ceiling of 24,900 feet. Even the PW-8, which has also been relegated to the substitute for standard class, and which is the equivalent in performance to our standard pursuit (the PW-9), is equipped with a 400-horsepower motor, has a high speed of 168 miles and a ceiling of 21,500 feet.

"The French bombardment squadrons are equipped with single and bimotored airplanes. Their single-motored airplanes are equipped with 300-horsepower motors, carrying only 682 or 990 pounds of bombs, with a high speed respectively of 108 and 96 miles an hour, and ceilings of 19,000 and 15,000 feet, respectively. Their dual engine bombers are equipped only with two 265-horsepower motors, capable of carrying 1,980 pounds of bombs, with a high speed of 85 miles, and a ceiling of 14,700 feet. Against this, our bombardment airplanes which were designed during the war are equipped with two 400-horsepower motors, capable of carrying normally 1,500 pounds of bombs, with a high speed of 100 miles an hour, and a ceiling of 10,000 feet, which with super-charges is increased to something over 15,000 feet.

"Also the observation airplanes with which the French are equipped have 300-horsepower motors, with a high speed of only 117 and a fraction miles an hour, and a ceiling of 17,500 feet. Our present substitute for standard observation machines are equipped with 400-horsepower motors, have a high speed of 118 miles, and a ceiling of 14,500 feet. The old DH-4-A airplanes, built in the war, were equipped with 400-horsepower motors, at a high speed of 123.7 miles an hour, and a ceiling of 17,600 feet.

"As far as I can gather, the British organizations are still using the war designed DH's, and the Vickers Vimy, which corresponds to our Martin bomber, while their pursuit squadrons are equipped with planes with a high speed of 148 miles.

"From the above, it can be seen that instead of being worse off, our air service is really better off than that of the two leading foreign nations."

In Defense of English Rifles

(Continued from page 10)

secs., was conditioned by the use of a 30-inch barrel. By using the 26-inch barrel, the result is you lose 188 ft. secs. at muzzle with a heavy bullet, not with a light bullet; and you know which loses velocity the quicker."

"We do not propose to entertain as a desirable proposition, even if it could be proved a reasonably practical one, to issue a 318 rifle with 26-inch barrels, giving a muzzle velocity of 2,500 ft. secs."

So it seems to us that the .318 cartridges which Justice Ostler used with such excellent results must have had a muzzle velocity of not over 2325 f.s., presuming that his barrel

was 26 inches long, and we doubt if it was longer than that. Therefore we in our turn might invite comparison with our .35 Magnum cartridge and rifle, 275-grain bullet, M.V. 2441 f.s., in 26-inch barrel, average groups at 200 yards 4 to 5 inches, copper jacketed bullet giving no metal fouling, nitrocellulose powder giving very slight erosion, thick jacket giving good mushrooming and insuring great penetration, recoil not more appreciated than that of the .318 due to better shaped stock.

It is our belief that the .318 bore, 250-grain Leslie Taylor capped bullet at M.V. 2200 f.s., is amply powerful enough for any thin skinned game of the world. Our criticism of the rifle and cartridge therefore has nothing to do with its killing power proper. Rather would we invite attention to the very great number of variations in bullet weight, shape of bullet, and weight and kind of powder charge which we have found, even in the product of the same manufacturer. We wonder very much how the British sportsman manages to have his rifle, which is almost always fitted with non-adjustable open sights, properly sighted for the particular kind of cartridge the ammunition company happen to be turning out at the time of purchase. We American riflemen like to have our rifle sighted to strike very close to the point of aim at a certain selected range, and we are quite sure from our experience that the only person who can adjust our sights correctly is the sportsman who is going to use the weapon, because, everything being absolutely the same, we find that the centers of impact obtained by two skilled riflemen may differ as much as six inches at one hundred yards or twelve inches at two hundred yards. We also like to put in a second shot immediately if we see that our first shot does not bring down the beast, and we quite fail to see how this can be done with breech mechanisms working as stiffly and with as many jerks and catches as we find in the British magazine rifles of recent manufacture with which we are familiar. Therefore we have ceased to wonder at the English sportsman's preference for the double rifle, in the making of which we acknowledge the supremacy of the London gunmaker.

Bombs, Bayonets and Bullets

(Concluded from page 11)

the rifle. It was very useful as an all-round working tool or utensil. Although I was a machine gunner, I always tried to have a rifle at hand for use whenever opportunity offered. As to that, for a year or more after the beginning of the war, all our machine gunners were supposed to carry rifles and bayonets. When our rifles were not in use, we dutifully kept the bayonets fixed, but, whenever we wanted to do any shooting we removed the useless encumbrance. In advancing to the attack, the infantry always moved with fixed bayonets but, so far as I could see, this only increased their difficulties in getting through obstacles; wire, brush and so forth; while certainly decreasing the accuracy of their fire.

If reliable statistics were available on the subject, I would be willing to wager that not one man out of every thousand who has gone into battle armed with a bayonet, has ever touched any enemy with it (prisoners excepted, of course). But, so long as men *do* go in with fixed bayonets, there will occur instances, especially in the final stages of the action and during the process of "mopping-up," where enemy men will be cornered, beaten and discouraged and the mere threat of the bayonet will bring prompt surrender. It is unfortunate, but none the less brutally true that most of the men killed with the bayonet have been caught in just such circumstances and their killing has been needless: nothing short of ruthless slaughter in fact, by ordinary, normal, human beings whom the excitement and frenzy of combat have converted into raving maniacs, with the primitive blood lust of their cave-dwelling ancestors. We need not dwell upon this phase of the question as the particular kind of weapons available has nothing to do with it, as was aptly demonstrated by one of our sergeants when he brained a German with a pick, while the latter was trying to surrender and by the German who, in a shell-hole with two of our men, (all three wounded), killed one with a comman who, in a shell-hole with two of our men remaining Canadian, with the same knife. Anything may become a deadly weapon if the incentive to kill be present.

But why should we revert to the spear and sword when we have such efficient "shooting irons?" How long, do you suppose, would a Macedonian Phalanx have stood up to a squad of riflemen? And our old friend Arnold von Winkelried, might have lived long and happily, had he used an automatic pistol, to open the way through the Austrian line at Sempach. (Parenthetically: I have never been able to figure out why the Switzers did not make use of their famous cross-bows on that occasion.)

American history furnishes us with at least one outstanding example of what can happen when too much dependence is placed on the bayonet. Colonel Patrick Ferguson was a rifleman, one of the best of whom we have record, but, being a British-trained officer, he taught his men to use the bayonet in preference to the bullet, yet, at Kings Mountain with preponderance of numbers and advantage of position, his command was literally destroyed and himself killed, by riflemen, not one of whom possessed a bayonet.

I am of the opinion that men who have been thoroughly trained in pistol shooting, particularly in quick firing at bobber targets, can defeat at least twice their own number of bayonet-men. There is one point that I want to mention here, lest I forget it, and that is that our present course of instruction and competition provides for nothing in the way of rapid and correct reloading of the pistol and it is something so easily remedied that I wonder that no one has thought of it. All that is necessary is that, in both rapid and timed fire, the entire score of ten shots be fired at one exposure of the target: the firer to have two magazines, each loaded with five cartridges. Load one of them and start off as at present: make the time limit twenty-five seconds for rapid and forty-five for timed fire. Every man will soon learn that he should change magazines after the *fourth* shot —and there you are. Five seconds is twice as much time as is really required but I just mention it as an example.

The old time pioneer Indian fighter carried a rifle, tomahawk and knife. I would have our riflemen equipped with a pistol in place of the axe and carry a couple of Mills hand grenades in a convenient pocket, for emergencies As to the knife; well, I hardly know. It is a mighty handy thing to have, for various uses besides fighting and for patrols and night raids, some kind of a short sword can be very useful. My preference, for this work, is something of the type of the French rapier bayonet. Used with an underhand thrust it can not be parried or evaded in a hand-to-hand encounter and a slight jab, even in the arm or leg, is quite sufficient to tame almost any man.

Before any argument starts, I want it distinctly understood that I am quite willing that all those who want bayonets should have them, but me, *I choose pistols.*

Oh, yes; I did once see an actual bayonet fight. It is one of several very vivid pictures of spectacular war incidents which never will be forgotten. A company of Scots (Gordons, I think) had just taken over a bit of trench which had been captured a few hours earlier by the Royal Fusiliers and were trying to establish themselves therein, when they were counter-attacked by a much larger force of Prussian Guardsmen (of the Second P. G. Division) who came on with a rush and without firing a shot: evidently well trained shock troops, they were intent upon ousting the Scots with the bayonet. I occupied a "ringside seat," sitting on top of a parapet with a machine gun, within a hundred yards, but unable to take any part in the fracas for fear of hitting friend as often as enemy. The "Ladies from Hell" did not do much, if any firing, but climbed out of the trench and met the attackers more than half-way. What they did to those fellows was a sin. It was primitive warfare at its worst, a bloody massacre. In a very few minutes there was not a living enemy in sight—and no prisoners were taken. Now, that was a fight between soldiers of an old British Line regiment and others from a similarly trained Prussian unit of the old army and, if they chose to fight it out with bayonets, why, it was all right with me, but I believed then and still believe, that I could have cleaned out that combined force of Scots and Germans with the single machine gun I was at the time operating. The only thing proved by this spectacular encounter was that, as bayonet fighters, the Scots outclassed the Prussians. But read the sequel: Within an hour after staging their picturesque exhibition, the Scots were literally wiped out by shellfire. Their whole affair was but a petty trifling bit of the great battle raging around them. On a front of less than one thousand yards, of which they were about the center, nearly ten thousand men died during that week. But then, *Que voulez vous? C'est le guerre.*

A Shoot Without a Shot

(Concluded from page 12)

or "Youth's Prize" as the case might be and the prize winners were to be determined in the same way as the turkey shoot.

Hoffman Arms Co., Distributors of the Webley Air Pistols, offered one of their Mark II Pistols as a special prize and again it was necessary to work out some new way to decide who was to have it. Each person was instructed to mark on the back of his turkey target his guess as to the serial number of the pistol and the guess nearest to the number was to win. It appeared that this had been decided when a young man was called to the platform but he insisted that the number on his target was his pass number and was put there for identification purposes only so the pistol was won by a young lady who declared her intentions of putting it to good use.

The program closed with the distribution of copies of various sporting magazines and Martin's offer to accept applications for membership in the N. Y. C. A. A., the U. S. Revolver Assn., the National Rifle Assn., the New York State Rifle Assn., to which many responded.

Before the carnival, the vaudeville artists, most of whom donated their services, and a number of the out of town visitors to the shoot, were entertained at dinner by the Committee at the Rose Room of the Allerton Hotel and the dinner was made the more enjoyable by a number of selections rendered by the Swedish Double Quartette.

For the sake of others who may desire to stage something of the same sort to arouse interest in the shooting game, there are two or three things that stand out in this scheme that may be followed and a few things to avoid. Setting the date near but not on a holiday seems to be a good thing to take advantage of the fact that the holiday spirit seems to loosen the purse strings. Charge an admission of some sort but let the admission pay also for a chance on one of the prizes—people take more interest in an affair that costs them something than in a free party. Provide some good entertainment to draw those who are only slightly interested in the shooting game and then give them something of interest in the shooting line and get the interest up in that also. Canvas the legal situation thoroughly and see that the necessary license, authorization, or what not, is obtained. Make all necessary provisions to avoid any accident of any kind as nothing will hurt the game more than an accident at an affair of this sort. Give EVERYBODY a chance to shoot.

One point that impressed us more than anything else at this affair was the interest shown by prominent officials of the New York Central Lines who were present at the dinner and the Carnival. Among those present were Mr. Edw. F. Stephenson, Secretary of the N. Y. C., C. W. Y. Currie, Editor of the New York Central Magazine, Willie Gaynor from the Office of the President of the N. Y. C., and nephew of a former mayor of New York City, Mr. R. C. Common, Land and Tax Agent, Mr. O. G. Browne, Claims Attorney and the man who has the reputation of running the funniest place in the system, Dr. W. C. MacLeod, who has charge of the Emergency Hospital in Grand Central Terminal. The President of the Athletic Association, Thomas Bruder, was untiring in his efforts to see that everybody was having a good time.

The meeting broke up with an announcement by Martin that there would be shooting all day Thanksgiving Day at the Range of the Ossining Rifle Club and invited everybody interested to come up and have a good time. Since there had been no shooting at the Carnival, Martin offered to pay range fees for as many as would come to Ossining and a large number announced their intentions of being there when Thanksgiving arrived.

The October 15th Number

(Concluded from page 6)

department for the month of October. His sight adjustment figures for different ammunition in the Springfield could not be obtained elsewhere so far as I know. The Major's observations on the 7.62 Russian are pretty pat and pretty positive. It would require a whole book to tell what is sometimes done to a .22 to make it shoot closer than the ammunition. Major Whelen has done the best he possibly could in a column of space. The only thing I'd disagree with him about would be the superiority of a 24-inch barrel, because the bullet wouldn't lubricate the bore of a longer barrel. I think that is humbug. Major's advice as to the 250 is just full of good sense—couldn't be better. Fact of the matter is the Major is always interesting, always straightforward and fearless in the advice he gives, and nearly always right.

I even read the advertisements in this issue of THE AMERICAN RIFLEMAN. Witness: I found the name of J. V. Howe connected with that of Fecker the telescope sight maker. To the best of my previous knowledge, Howe was with the Hoffman Arms Company. J. V. Howe has helped to organize two gun companies, and now he is with neither. I hope the next gun company that he organizes that he becomes the head, tail and body. Anyhow, Mr. Fecker is to be congratulated. J. V. Howe is a fine workman, honest and painstaking, and conscientious to a fault. He is a friend of mine and carries that friendship wherever he goes.

Bullet Gyration

(Concluded from page 13)

negligible quantity. Today, given a light barrel, relatively heavy and hard bullet, and a heavy charge of smokeless powder, it is a factor to be reckoned with.

How to practically eliminate this whip? Make rifle barrels weighing from fifteen to twenty-five pounds each according to load desired. Not practicable you say. No, and not necessary either—our hunting rifles are too efficient already as game destroyers.

I am well aware that there are other factors influencing the external ballistics of our high power rifles that I have not mentioned. One is drift. And of course all have to be reckoned with. I have merely endeavored to show the spiral path of the bullet in flight—or as the writer believes it to be.

I enclose a diagram of a high power's theoretical and actual trajectory as I believe it to be—greatly exaggerated of course, by way of illustration.

In conclusion I hardly need to state that the writer has been a "gun crank" for more than thirty years and found a world of pleasure in hunting and experimenting with rifles; from the old muzzle loader squirrel rifle to its ultra-modern successor the extreme high power rifle, and gets great enjoyment also from the pages of your most excellent magazine, THE AMERICAN RIFLEMAN.

Never Too Old to Learn

By An Old Timer

HAVING attended all but three of the national matches during the past twenty years one might think that I might be competent to pass judgment on at least some branches of the shooting game.

In 1913 I bought myself a Winchester 5-B scope and thought I was all set to go out and eat up the bull's-eye, but for some reason or other I never had any success as I could almost always go out and beat my scope score with iron sights. Finally in 1921 I traded in my 5-B on a 5-A thinking that it was the scope and that I would do better with a better one.

Not so, however, except in spots as I would do well at some ranges but nothing elsewhere. In 1922 I bought myself a Fecker 10 power scope and I found similar results with that scope, at times making long runs when I was at certain ranges but nothing elsewhere.

To make a long story short, I found out this year after a dozen years of indifferent efforts just why I got nowhere with the scope.

Some one told me that if the parallax was out at 100 yards, it would necessarily be out at 50 yards or 200 yards.

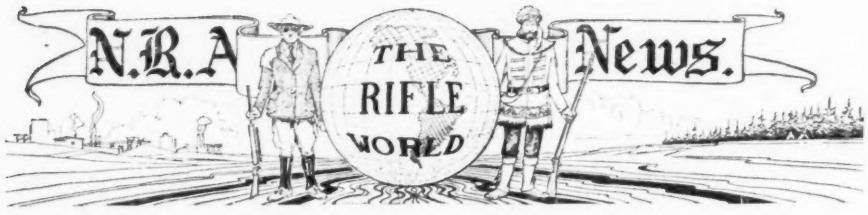
I thought that if it was a straight line to the target at 50 yards and parallax was out for that range, it must be out to a straight line 50 yards beyond that or 200 yards beyond for that matter, there should be no change.

Imagine my chagrin when I set the scope for a perfect 50 yards and found my crosshairs wandering around in the 10-ring at 100 yards, and at 200 yards moving as much as four inches and at 600 to 1000 yards moving half across the bull's-eye.

Is there any wonder I got no results except in spots, that particular spot being the range for which my scope happened to be set?

What brought to my mind first that the 50 yards setting might not be good for 100, 200, etc., was the statement that if my spotting scope was set for 50 yards, I would have to change it for 100, 200, etc. That statement let the light into my somewhat dull optical understanding.

Never too old to learn, though it took me a long time to find it out.



Conducted by C. B. Lister

The Latest Miami Boom

H. H. Rieckelman

BOOM! BOOM! bellowed the .45-70. CRACK! CRACK! barked the .30-30. Pip-Pip, whispered the small bore, and the turkey shoot of the Cincinnati Miami Rifle Club was on in full blast.

At eight-thirty prompt the range officer appeared on the grounds and with the aid of the target boys placed six targets in the pit, three targets for practice shots at five cents per shot, and three for the turkey shoot at twenty-five cents per shot. The targets were the ten inch bull, containing a three inch white square in the center. Each shot striking the square entitled the lucky shooter to a turkey, and but three turkeys to a shooter. The range was 200 yards offhand. The weather chilly, sky overcast, but no wind, and it looked like an ideal day for straight shooting.

The first contingent on the field was the Columbus, Ohio, crowd, who motored 125 miles to show the Miami tyros some skilled shooting and incidentally reduce the bank deposit of the local team by carrying away a few orders for turkeys. We may say they did both, the crack shooting and the carrying away; they worked both ends from the middle. This aggregation of shooters call themselves the "Business Men's Rifle Club." Do you get it? They couldn't have chosen a better or more suggestive name had they studied the matter six days and a Sunday.

The Wilmington gang was a close second to appear and they came apparently with the same expectations and felonious intentions, disregarding the long drive with several arduous detours en route, intent only on rifling the exchecker of the Cincinnati boys of their hard-earned shekels. Hillsboro, Kings Mill, Hamilton, and other towns up and down the Miami Valley added to the piratical crew that assembled on the fatal morning of the first day of November A. D. 1925.

The sale of the practice tickets started off gloriously. The boys were suspiciously generous with their jitneys, anticipating the splendid interest they expected us ultimately to pay in turkeys. This side of the range of course was all nice velvet, no comeback—no turkeys—no nothing but plain income tax profit. We cleaned up the tidy sum of $11.25 on this side and the turkey range on the other side inspired us with trustful visions of more beautiful things to come.

But the turkey side of the range—alack and alas! Why did we ever conceive the idea of holding a turkey shoot and inviting these farmers from up state to come down and practise in our back yard? They began playing horse with us from the first crack out of the box. A husky gent from Wilmington came up to the line in a casual, nonchalant way, carrying an unobtrusive, coy, little .22. He made one or two preliminary passes with it, pointing it at the target. It said "Peep!" and immediately the paddle with a full sized gobbler attached showed up on his target and five dollars of good turkey meat went for the modest shilling. Had he been content with the damage done we might have survived, but this was not the purpose that actuated the Wilmington crowd. They came for turkeys and this person took three before he wended his way homeward. He gave his name as Allen but we notice from the tally sheet our range officer had it spelt erroneously "Allin."

It is a pleasure to report (likewise a pain) that this happening on the part of our Wilmington friend was not the only incident of taking the turkey on the wing, the first shot at the target. In the case of the second shooter the circumstance connected with the affair was phenomenal; we might say there were certain elements connected with it that bordered on—shall we say the eerie? This shooter after practising diligently on the targets reserved for practice and arranging his sight by micrometer scale, hied himself over to the turkey targets and on his way conceived the brilliant idea of raising his sights two full points. The natural supposition of the effects of this action would be that his shot would agitate the upper firmament, in fact muss up some of the filmy vapors floating in the vasty distance. But no—odd as it may appear—his first shot was a turkey and he retired amid the plaudits of the assembly to whom he related this extraordinary achievement. Can you beat it?

Uncle Sam had his representative there, a young lieutenant, a mighty fine fellow, but in our opinion an immoderately good shot. He, the lieutenant, had put one over on the range officer several weeks before by requesting permission to shoot the ranges at some time for qualification, stating that he was a little seedy at practice. He came to the turkey shoot instead. He qualified as Expert, his score A. A. A. A. 1—four birds.

We have in mind taking up the matter with Uncle Sam on his, the lieutenant's, next income tax return, especially directing attention to this scandalous profiteering and specifically asking consideration of what we believe to be rather unnecessarily high class marksmanship that U. S. develops in his representatives.

Some guileful individuals can put out a pretty card soliciting the public to call on them, offering oil stocks or some other non-essential commodity at so much per, and with small inducements gather in a little loose change. But let an honest-to-goodness rifle club send out a card gotten up just as alluringly, inviting the shooting fraternity to a little gun fest, offering turkeys at so much per:—the gun shark comes along, takes your roll and prospective bankruptcy stares you in the face. These events may pay in the east where nobody shoots, and perhaps in the west where somebody shoots, but they seldom pay in Ohio, where everybody who is anybody comes to shoot.

Money in a turkey shoot? Piffle! We lost 34 birds, but we are game to call another one December 6, to which we invite one and all, without undue solicitation, to come again.

* * *

GIRLS' MUNICIPAL CLUB MINNEAPOLIS, MINN.

MEMBERS of the Girls' Municipal Rifle Club and their friends gave an out-of-door Shooting Party at Fort Snelling about ten miles from Minneapolis, Saturday afternoon, November 7. Some of the members drove out in a car but the remaining nine girls jammed into a taxi which read "Extra Passengers Free." The taxi driver happened to be a very congenial young man and did not seem to mind the extra load, however.

We arrived at the Fort about 3 P. M. and as it was an exceedingly cold day we at once made a big bon fire to keep warm. We took the two .30-'06 caliber Springfield rifles issued to us by the N. R. A., and fired at a distance of 50 yards. Miss Aurora Hill who had never fired a Springfield rifle before was game to be the first on the firing line and she made a very good score too. Shooting the .30-'06's was a good way to keep warm as the rifles kicked and the barrels became very warm.

After shooting we roasted weiners and marshmellows and had coffee. One of the soldiers offered to clean the rifles for us and we did not hesitate a bit in letting him do so.

We had one hour to waste before the taxi driver promised to return for us so we decided to walk a few miles to meet him. We stopped on the way to play games as we were getting very cold from the exposure. Soon we piled into the cab again and to keep the driver in good humor one of the girls sat in front with him.

Every one had a very good time in spite of the fact that a number of very sore shoulders developed from the outing.

* * *

U. S. S. RALEIGH WANTS MATCHES

THE Rifle Team of the U. S. S. Raleigh wants to arrange for rifle matches during the stay of the ship in Boston during the coming winter and early spring. The sailors would prefer to use the Regular Service .30 caliber rifle, but if this is not feasible, any other arrangements will be satisfactory to them. Replies to this challenge should be addressed to Ensign E. A. Cunningham, U. S. S. Raleigh, c-o Postmaster, New York City.

* * *

1925 PAN AMERICAN CANCELLED

THE 1925 Pan American Matches which were to have been held this month at Havana, Cuba, have been cancelled by the Cubans. The tryout for the American Team was conducted at Camp Perry from among the excellent shooters on hand and it had been expected that the United States would be represented by a hard-shooting organization which would include several new faces to the International game. No reason was given by Cuba for calling off the Matches nor was any definite date for their holding set.

WASHINGTON STATE ASSOCIATION PETITIONS FOR QUALIFICATION CHANGE

At the annual conference of the Washington State Rifle Association the following resolution was presented by Mr. John M. Curry of the Yakima and adopted by the State Association:

"To The Director of Civilian Marksmanship:

"The regulations governing the rifle which may be used by members of civilian clubs in firing the qualification course read: 'The rifle shall be as issued, no modifications are permitted.'

"WHEREAS, The restrictions placed on such rifles are resulting in fewer men shooting the qualification course thus resulting in a poor record to the War Department for most of the clubs, and

"WHEREAS, We believe that rifle shooting would be further promoted and given a greater impetus among the civilian clubs if this regulation was modified, therefore,

"Be it resolved, That the Washington State Rifle Association, in conference assembled petition your board to modify or try to have modified this regulation to permit members of civilian clubs to use in the qualification firing any U. S. Military Rifle equipped with any iron sights and any stock or forearm, and

"Be it further resolved, That the secretary of the Washington State Rifle Association be instructed to send a copy of these resolutions to the State secretary of each State association and request the cooperation and assistance of the association in securing these modifications of the regulations for qualification."

There are arguments for and against the change in regulations suggested in this resolution. There are undoubtedly many civilian riflemen unable to fire the qualification course at the present time because they do not possess an as issued rifle. On the other hand, it may be argued that the men with receiver sights and improved stocks on their rifles have an advantage over the men who have qualified with the as issued arm. The prime purpose of the qualification course is to establish a standard rating for all marksmen and it might not, therefore, appear advisable to permit the use of equipment by one man which automatically gives him an advantage over another shooter using service equipment. The subject, however, is worthy of careful consideration by all concerned.

* * *

MASSACHUSETTS NATIONAL GUARD BOOSTING GALLERY RIFLE

GENERAL Order No. 6, A. G. O., Commonwealth of Massachusetts, dated at Boston, October 31, provides for a series of indoor competitions and for gallery qualification for the Massachusetts National Guard and indicates that one reason for the constantly excellent showing of the Massachusetts National Guard Team at the National Matches may be due to the fact that the closing of the service rifle ranges in the winter is not permitted to interfere with regular practice instruction. Interesting provisions of the General Order mentioned are every company or similar unit of the Massachusetts National Guard armed with the rifle is required to enter one team in the Match. Organizations not armed with the rifle may enter one team per unit. The teams consist of eight men but only one man on each team may be a veteran of the Massachusetts State Rifle Team. The five high scores will count. Men who are ineligible to shoot as members of their company teams may fire at the same time and under the same conditions, their scores counting toward the State Individual Indoor Championship. Conditions permit the use of any .22 caliber rifle, weighing not more than ten pounds, any iron sights, .22 short ammunition, ten shots per man standing and ten prone at 25 yards, on the "X" target.

For the purpose of comparison with the published scores of the regular gallery competitions, it might have been advisable for Massachusetts to adopt the regular N.R.A. 75 foot gallery targets for these competitions but the question of expense probably entered into the matter, the "X" targets being available for regular issue.

An indoor qualification course has also been adopted and is incorporated in the same General Order providing for ten shots in each of the four standard positions, target "X" score of 175 being required for expert, 155 for sharpshooter, and 135 for marksmanship. Appropriate insignia will be issued by the State.

* * *

COLLEGE RIFLEMEN NOTE

THE three months rule which is a part of this year's Gallery Program relative to club members who wish to fire on teams in the Interclub Matches is not intended to apply to college clubs in the intercollegiate events. There is already a four-year rule relative to Intercollegiate competition barring from membership on Intercollegiate teams men who have fired for four years as members of a college team. This is the only restrictory ruling that applies to college teams in the N. R. A. Intercollegiate Championship.

* * *

CRESTLINE BREAKS IN YOUNGSTERS

SHELBY	Prone	Sit'g	Kneel	Stand	Total
Laser	49	49	42	39	179
Lindsey	46	48	38	44	176
Pfahler	47	47	45	36	175
Kelser	40	46	45	32	163
Castor	48	43	43	23	157
Davis	48	42	45	19	154
May	41	43	39	15	138
Sipes	37	39	34	23	133
				High five	850
CRESTLINE					
Castner	50	47	47	47	191
Farris	48	47	48	44	187
Johnson	48	50	47	41	186
Baldinger	49	48	48	38	183
Cox	48	48	46	27	169
Boals	47	49	46	23	165
Shealy	47	47	38	19	151
Reeves (Junior)	46	31	26	20	123
				High five	916

This match is typical of those being shot over Ohio during the early part of the Indoor season, preparatory to an Ohio Championship to be held in Columbus in February, auspices of The Ohio Rifle League. The League has divided the State into Divisions, each of which is to determine its champion club and have that club participate in the State Championship.

These matches—in the four positions—are always bringing out the unusual. In the one above, there is but one possible in the prone position and one sitting. Ordinarily either team can hang up a string of possibles in these two positions. Baldinger, Crestline, usually shoots around 170, but he got a good one to frame in this match at 183; Johnson had not shot with his Crestline teammates for months, but he picks up a scope-sight outfit and places third with 186, better than he ordinarily shoots with his own outfit. In the competition on the Crestline range a week previous to this date, Shelby made 869, and Crestline 899. This is evidence that the former was badly off its stride and the latter out-shot itself.

Crestline always slips in a Junior or two for "seasoning." Young "Weenie" Reeve threw 166 the first time he took on this course, but got the "buck" in this match. More than once a Junior places among high five. The Crestline Girls' Team, sponsored by the Crestline club will shoot in the Women's N. R. A. Match this winter, the girls having proved in the W. J. R. C. program that they are ready to assume greater responsibilities.

Through Dr. M. E. McManes, Piqua, Ohio has challenged the small bore fans of Ontario province and the Iowa small borers, for matches during the indoor season and apparently same will "go over."

* * *

THE OHIO RIFLE LEAGUE MEETING

MEETING in the club rooms of the Columbus Business Men's Rifle Club, Columbus Hotel, November 22, nine Ohio clubs were represented by sixteen men. A meeting could hardly have been handled with greater dispatch and harmony. To secure greater representation and better co-operation among member clubs it was legislated to ask the clubs' new members and those coming later to elect or appoint one of their liveliest workers to act as a member of the League's Advisory Board.

Doctor M. E. McManes, of the Piqua club, member of the N. R. A. Board of Directors, was asked to communicate with the management of the N. R. A. with a view of securing a match for our League at Camp Perry in 1926. Merchandise prizes of a substantial nature are to be offered if this event can be arranged for.

Dates for the State Small Bore Championship were set for February 20, 21, and 22—the latter date being on Monday and a holiday, so assuring a three-day period quite generally given to closed offices and shops. In connection with this event, the League heartily endorsed the Iowa-Ohio and Ontario-Ohio matches that are being arranged for by Dr. McManes. This program would call for a group of matches on the twenty-five yard and fifty foot ranges, any and metallic sights. A special committee of the following gentlemen were appointed to arrange all matters pertaining to these matches; Dr. M. E. McManes, Chairman, S. W. Teague, E. M. Farris, E. S. Hooe, C. E. Henderson, Messrs. Maxwell, Sherman and Martin.

Dick Barr, Mansfield, started a discussion on Publicity that brought out much comment that would demonstrate that the press holds the key to the success of many a hard-pressed club—only the club officials seem not to learn this fact until too late. The recent article in THE AMERICAN RIFLEMAN, "Nothing in the Papers," was cited as typical of the newsgatherer's attitude toward club publicity men who do not realize the value of prompt action and the need for readable stuff for the public.

Out of the goodness of their hearts the delegates re-elected their officers for 1926, as follows: S. W. Teague, President, M. L. Bonta, Vice President, Q. D. Foster, Executive Officer, L. B. Bender, Treasurer, E. M. Farris, Secretary.

GALLERY REGULATIONS

In order to clarify conditions in the Gallery Program relative to the authorized shooting positions the following revised regulations are published for the information and compliance of all concerned:

POSITION.—No position will be assumed in which the hand normally supporting the rifle is placed in the rear of the trigger guard. The "Texas Ranger," "sawbuck," "jacknife," and similar positions are not permitted. In all positions the rifle will be supported by the shoulder and both hands only.

PRONE.—Body extended upon the ground, head toward target. No portion of the arms, except the elbows, will rest on the ground. Rifle supported by shoulder and both hands only. Rifle will not touch the ground.

SITTING.—Weight of body supported by buttocks and soles of feet, no other portion of body touching the ground or any artificial support. Points of the elbows will be approximately on the knees or just inside the knees. Feet or legs will not be crossed nor braced against each other or any post, ledge, or artificial support.

KNEELING.—Weight of body supported on right knee, leg and foot and left foot, or left knee, leg and foot and right foot. No other portion of the body touching the ground or artificial support. Sitting on side of foot instead of on the heel is permitted. The folding of a ground cloth or other artificial support under any portion of the leg or foot is prohibited except in the free rifle matches. The elbow of the arm engaged in functioning the trigger must be free from support. The point of the elbow of the arm supporting the rifle will be on or approximately on the knee.

STANDING.—Erect on both feet, all other portions of body free from everything. The so-called "hip-rest" position is permitted in the small bore events. The use of a belt in any manner as an auxiliary to assist in holding the elbow forming the hip rest is prohibited. In the high power events the arm supporting the piece must be free from all support and the sling may not be used. The palm rest is permitted in the Free Rifle events only.

* * *

BOSTON HILLS TROPHY MATCH

AFTER two postponements on account of impassible clay roads and heavy storms, the second annual match for the Boston Hills Trophy was finally shot off on November 1. Canton Rifle and Pistol Club won in 1924, but this year did not appear to defend title to the cup, the match going to a scratch team gathered together from the R. O. T. C. of the Municipal University of Akron by Lt. Merl L. Broderick. The lieutenant has shot on the Infantry team several times and was ineligible to go to Perry this year. He heard about the match only on the day before it was held. Akron Rifle Club failed to get in, its team captain having been called away by serious illness in his family, so that the rifles and ammunition were inaccessible.

The Boston Hills range is maintained by the Northwestern Ohio Gun and Country Club and will eventually be the best in this part of the State. It is used by the Cleveland militia units as a training ground. At the present time, six 600-yard targets are in use, and the valley will be cleared back to give 1,000 yards. Getting down to the range requires some acrobatic ability when the clay is wet, as it was on the 1st, and even more to climb out again. The mist lies thick in the valley, which is surrounded on all sides by high clay hills, and on the day of the shoot the targets were not visible from the 200-yard firing point until just before noon. The line of fire is about 20 degrees E. or N.

The comedy feature of the shoot was staged by Dr. Malcolm Dean Miller by means of a Krag carbine and a "gun-bearer." The latter held four cartridges on his outstretched palm for single loading, and when these were gone throwing the cutoff made the five in the magazine available, so that the ten were plugged in for a score of 30 offhand at 300 yards in less than a minute. The Doctor always "shoots like a man" because his size makes sitting or kneeling almost an impossibility.

* * *

AMES FACTORY RIFLE CLUB

AMES Faculty Rifle Club started the gallery season by winning a double header from the Lawrence Park Rifle Club of Erie, Pa. The match called for twenty shots in the sitting position. The scores:

Ames Faculty Rifle Club Team No. 1.

McClay	97-97	194
Davis	95-99	194
McKelvey	96-99	195
Hiland	96-99	195
Friedrich	100-99	199
		977

Lawrence Park Rifle Club Team No. 1.

Perkins	89-92	181
Loder	88-95	183
Patterson	89-95	184
Hammerback	93-94	187
Bunker	97-99	196
		931

Ames Faculty Rifle Club Team No. 2.

Brevik	85-89	174
LaVelle	86-95	181
McNeil	93-95	188
Ringland	94-95	189
Powers	95-97	192
		924

Lawrence Park Rifle Club Team No. 2.

Parsh	73-85	158
Defoe	78-85	163
Gaylord	80-86	166
Randall	89-90	179
Carziluis	88-90	178
		844

Brevik, Lavelle, Ringland and Powers fired in gallery competition for the first time.

* * *

CRESTLINE JUNIORS SHOW UP DADS

SHOOTING their Third Annual Thanksgiving Turkey Match, the Crestline (Ohio) club invited the junior boys whom they have been sponsoring and gave them the chance of a lifetime to take home the "festive bird," November 20. No one could compete who had not shot at least twice in the weekly four-positions and thus established a "par." Eleven anxious grey-beards and youths gathered to the fray. The club's champion shot managed to shoot one-third of a point above his average, the runner up slipped down about eight points, while the three juniors all shot well above their pars. The youngest of all, sixteen-year-old "Weenie" Reeve, steadied down as though his life depended on the "boid" and turned in an increase over his general average of twenty-four and one-half points. Yes, he was SOME happy kid! It not only won his parents over to letting him come in on the full program, but it has shown that the club wants to encourage the beginner. These same youths and their team mates are leading the Winchester Junior Rifle Corps Winner Seal fight and the girls of the town are next in line. The Y. M. C. A. furnishes the range and instructor and insists that only the right kind of personal and range conduct be permitted. It has built up in this manner a future team personnel that is enviable.

Crestline will also conduct a Christmas Turkey shoot, introducing some new features and likely taking the girls in under the same conditions that the boys have been shooting.

* * *

ANNUAL REPORTS

ALL club bills which have been sent to clubs for 1926 reaffiliation, contain an outline to be followed in submitting the report of the club's 1925 activities. In the past there has been more or less laxity in requiring these annual reports. The present management of the National Rifle Association, however, is desirous of knitting the organization as closely together as possible, and feels that the annual report of the club secretary is an important feature in this connection.

Annual reports, if properly submitted and drafted in accordance with the suggestions contained on the reaffiliation bill, not only indicate to national headquarters what local units are doing, but they will contain many worth-while ideas that can be passed along to other clubs through these columns. They will furthermore point out the weaknesses that exist in a club organization and will enable headquarters to help along the local units with suggestions.

If you have not already submitted the annual report of your club for 1925, do so. Make it as complete as possible and tell your troubles as well as your successes. You will have attentive readers and sympathetic listeners in Washington.

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SILVER LAKE, INDIANA — ACTIVE

THE civilian club at Silver Lake, Indiana, reporting an annual membership of twenty-two, advise that they are just installing an indoor range and that all arrangements are complete to open a modern outdoor small bore range in the spring. The club is working closely with the Indiana Bankers' Association in the training of vigilantes to protect Silver Lake banking institutions against holdups. The club has instituted an "every member get a member" campaign. This has just been put on, but to date every member of the club has taken at least one prospective new member to the range, and by furnishing the rifle and ammunition, have gotten these prospects properly started. These men have also saved their AMERICAN RIFLEMEN and either given or sent them to some one.

This indicates a spirit which will not only increase the active membership of the Silver Lake Club, but will do a great deal to increase general interest throughout the community in the rifle shooting game. We may expect, before another year has rolled around, to hear a great deal more about this Silver Lake outfit.

THE DOPE BAG

A Free Service to Target, Big Game and Field Shots—All questions answered directly by mail

Rifles and Big Game Hunting: Major Townsend Whelen **Pistols and Revolvers: Major J. S. Hatcher**
Shotgun and Field Shooting: Captain Charles Askins

Every care is used in collecting data for questions submitted, but no responsibility is assumed for any accidents which may occur.

A .25 Caliber Maynard

By Dr. H. L. Lake

I WAS much interested in the article in the November 1 number about that old Maynard rifle and the owner's trouble in getting good results with it. I had one of that make of .25 caliber rifled one turn in fourteen inches, weight eight pounds four ounces, twenty-eight-inch barrel. It was a favorite of mine and I spent much time in refining the ammunition—which as Brother Whelen says is the thing to do to get results—and after many experiments found a load that gave very accurate results up to 200 yards. Now 200 yards is to a .25 caliber Maynard like 1000 yards to the Springfield only more so. This old Maynard did the trick with this odd load. U. M. C. primer (nitro), 1½ 5 grains American Wood powder in bottom of the shell, filling up shell with black (about 17 grains). This was covered with a blotting paper wad to hold it in place. For target work the bullet—86 grains 1 to 15—was seated in the barrel ahead of shell—about 1-32—with a ball seater. With this load my friend F. P. Keeler has put ten shots in a 4-inch circle at 200 yards. He had six in 10 ring, three 9's, and one in 8 ring. All the shots were in the upper left quarter of the Standard Target Bull. I have one target, ten shots in 4 inch circle, eight shots, ten shots, inside a 5½-inch circle. I once got nine shots consecutive in a 3 inch ring but the tenth shot enlarged it to 5½ inches. All these were at 200 yards muzzle and elbow rest telescope sight. The powder was measured with an Ideal powder loader with a priming chamber and a long tube was used to pack the powder snugly in the shell. The greatest care was used to mold and lubricate the bullets—Ideal mold and bullet resizer and lubricator. It is hardly necessary to say that these targets were made in fine weather conditions. This load in the Maynard is very fine for woodchucks—deadly medicine in fact—and for squirrel and any small game one of the finest loads obtainable. I have in the "Scrapbook" with the 200 yard targets over thirty targets shot at 40 yards that are on or in an inch ring, some on ¾ inch ring.

I want to tell A. A. K. that he has a very useful rifle handy to care for and as practical as the more "modern" ones. If he wishes, I would be glad to assist him in any way to get best results out of his fine rifle.

I enjoy reading your publication very much I generally turn over the leaves to Brother Whelen's page first off (I have his book) and it is sure to be "meaty." I am glad we can go to him for the right "dope."

HEAVY BARRELS

SINCE I am about to order a new barrel for a Springfield action, I would appreciate your advice regarding the same.

The gun will be used only for special work, long shots where one has plenty of time (my favorite position prone or sitting), but where great accuracy is essential and with my 8-power Fecker with the 1⅛-inches eyepiece.

How about a heavy barrel 26 inches to 30 inches long? I weigh 135-140 pounds and am 5 feet 4 inches and rated as strong and I keep myself in good condition.

A local man is making barrels heavy, 1⅛ inches at breech and ⅞ inches at muzzle, 28-30 inches long that shoot well inside 2 inches at 200 yards. (He has just made one for Captain Tupper, Sacramento, that made a group of 1⅛ inches by 1⅜ inches and averaged 1¾ to 2 inches.) Do you think that would be too much gun for me? When the barrel wears at the breech end I can have it cut down and still have enough left, can I not?

My Springfield sporter which I restocked under your directions is fitted with a 2¾X Hensoldt (I had it rechambered by Niedner), shoots 3-inch groups (average) at 200 yards, but I do not like to put any other scope on and change from one to the other, and then the gun is light and racey looking and would be all covered with scope blocks, if I add more mounts. A. N. D.

Answer (by Major Whelen). Other things being equal, a heavy barrel 1 ⅛ inches at breech, and ⅞ inches at muzzle, and 26 to 28 inches long, should shoot quite a little better than the standard light 24 inch Springfield barrel; that is enough better to make it worth while for very fine target shooting. Unless you are going to use your rifle for offhand target shooting, and have set-triggers fitted, it would be rather of a disadvantage to have a barrel over 28 inches long. The very long, heavy barrel swings slow and is a distinct advantage in slow fire, offhand shooting, but the muscular exertion to hold it steady in other forms of shooting, makes it often a little disadvantageous over shorter barrels.

Of course I don't know anything about the barrels made by the rifle maker you refer to. You don't mention his name. Being on the ground, you are the best judge about him. If you should wish, I could give you the names of three rifle-makers here in the East, any one of whom could turn you out a heavy barrel which would almost surely beat the Springfield barrel of standard light weight.

A heavy barrel, about 28 inches long with dimensions as described above, would make the complete rifle weigh about 13 pounds. Many men find that unless they practice holding it almost daily, this heavy weight introduces a muscular tremor which actually makes the heavy rifle less accurate than the light rifle for them But as you are strong and husky you can probably get away with it all right if you do some practice aiming with it for a few minutes two or three times a week. But don't suppose that you will ever carry such a rifle in the hunting fields, because you will find after one trial that it is much too heavy, and too slow to get into action for that. But as target weapons these heavy barreled Springfields are superb.

HUNTING IN ROCKY MOUNTAINS

I WILL appreciate the favor of an answer to the following problem in rifle shooting and hunting in the rough, rocky mountains where there is lots of timber:

For hunting and shooting the average black bear, with an occasional deer and wild turkey in the rocky mountains where the greatest height is less than seven thousand feet, and hence plenty of real timber, what type of rifle would you advise? I do not have the time nor the money for an expensive equipment. However, I can shoot fairly well and surely enjoy it. What do you think of the .35 Remington, pump action with 18½ inch barrel for such work? What would you suggest in a rather short, light gun that can handle pretty high power ammunition, under circumstances that would not afford but few if any shots at more than 200 yards? J. V. D.

Answer (by Major Whelen). A .35 Remington rifle would be excellent for your use except for wild turkey, for which the caliber is rather large. If you wish a rifle which will be used much on turkey I should think a short barrelled Remington pump action rifle or a Winchester carbine of .30-30 caliber would suit you better, using ammunition loaded with full jacketed bullet for turkey. Either the .35 Remington or .30-30 cartridges have ample and accuracy power for deer or black bear up to 200 yards.

AMERICAN WALNUT FOR SPRINGFIELD STOCK

IS curley American walnut strong enough for a Springfield stock? I thought it might break at the grip. Where can I get the curliest and prettiest American walnut stock blanks? What is the best kind of finish for American walnut? Where can I get complete information about the different ways of finishing gunstocks? I mean London (oil polish, glossy shellac dull) shellac, etc.

In THE AMERICAN RIFLEMAN you gave a formula for a cleaning compound that you said is practically the same as Hoppe's No. 9. Can you give me a formula for Chloroil, Saftipaste and for the very best mercurial ointment.

I want to learn to shoot rabbits running and prairie chickens flying with a rifle. I want to use a Remington model 12 for this work. What do you consider the very best sights for this purpose?

I am inclined to think one of the Marble front sights would be the best for this kind of work but am not sure which one. What size should the bead be for shooting at moving objects?

What is the reason for rusting gun barrels several times and then coating them with oil? Is that any better than bluing them?

Why is it that the National Rifle Association will not comment on the Newton rifles?

Is the .22 long rifle powerful enough for small game? Is the .25 Stevens accurate enough for small game? I think the .25 Stevens would be a good cartridge for small game if it is accurate enough. Have never used this cartridge, but doubt if it is accurate enough.

Besides water what do you consider is the best cleaning preparation or compound for cleaning .22 caliber when semi-smokeless cartridges have been used?

What is your opinion of celluloid covered and brass rods? I want to get the very best cleaning rod I can buy. Do you consider the Belding and Mull steel rod as good as any? Should a cleaning rod have a swivel or not? Are the British Parker brushes hard on rifle barrels? Have heard that .22 caliber rifles do not need to be cleaned. That if the bore is coated with B. S. N. Saftipaste that is all that is necessary and the bore will keep in perfect condition. Would like to know what you think of this method. I am inclined to think there is danger of the barrel rusting if it is not cleaned but simply coated with Saftipaste.

Is the .22 W. R. F. as accurate as the .22 long rifle? Is it powerful enough for small game?

Why did the Navy discard the Lee Straight Pull rifle? That is a very fast action.

Are there any booklets published on remodeling the Springfield. I mean books or booklets telling what charges should be made rather than how to make them but of course if it told both that would be all the better.

Are guns that have the barrel and stock fastened with the pin and slot arrangement any more accurate than those fastened in the regular manner? I think the pin and slot arrangement is the method of fastening the stock to the barrel that was used on muzzle-loading rifles. Have heard that rifles fastened in this way are more accurate.

Is a windgauge rear sight much advantage on a .22 caliber rifle that is used for hunting only?

Have heard of a roller being placed on the action of the Springfield. What is the advantage of the roller?

What is the weight of the aluminum butt-plate sold by the N. R. A.? Is it checked? Which do you think is the best for a Springfield, that aluminum butt plate or a rubber recoil pad? Which weighs the most?

Is there any advantage in having a rifle more accurate than the person that shoots it?

Are Poldi-antiCorro barrels much better than the ones supplied with the sporting Springfields sold by the N. R. A.?

About what is the cost of antiCorro barrels?

Is a ribbed barrel much of an advantage?

Is the Belding & Mull rear sight for Springfields thoroughly accurate? R. H. B.

Answer (by Major Whelen). American walnut even when curly, is amply strong enough for gunstocks provided the grain of the wood at the grip runs fairly parallel to the grip. For complete details for finishing and oiling stocks see "Amateur Gunsmithing" price $1.50 to members of the National Rifle Association, $2.00 to others, from THE AMERICAN RIFLEMAN.

I do not know the formulas for Chloroil or Saftipaste. They are both secret formulas. Mercurial ointment is simply lard with as much mercury mixed with it as it will take up. It can be had so cheaply at drug stores that it does not pay to mix it yourself.

The best sights for the Remington 12-C rifle are Lyman or Marble rear on tang and ivory semi-jack bead front sight.

The bluing of a gunbarrel is a process of rusting and polishing. Oil is afterwards used to prevent the continuance of rusting. That is thoroughly explained in the chapter on "Bluing" in "Amateur Gunsmithing."

Many people think that the .22 Long Rifle cartridge is not powerful enough for small game. I have found it ample for grouse and squirrels but have not used it much on larger game. The .25 Stevens cartridge of Remington make is accurate enough for small game. I do not know the accuracy of other makes.

Water, Chloroil, and aqua ammonia are the only perfect cleaners that I know of for any rifle.

Celluloid covered, or naked brass rods are liable to hold grit and abrasives and cut the steel of the barrel. The best rods you can obtain are those of spring steel, and particularly those made by Belding & Mull, Philipsburg, Center Co., Pa. I do not think it is safe to leave any rifle uncleaned and merely coated with Saftipaste.

The .22 W. R. F. Cartridge is not nearly as accurate as the .22 long rifle.

The Lee Straight Pull rifle was discontinued by the Navy because the Krag was a better arm, and because of the desire to have only one weapon for all U. S. forces.

The book "Amateur Gunsmithing" gives most full and detailed information as to how to remodel the Springfield rifle.

The pin and bolt arrangement of fastening the barrel to the forearm is probably just as good as the hand method, but it requires so much expert hand work, and consequently is so very expensive, that it is seldom seen these days. For example, if you had this method used in remodeling a Springfield rifle by one of our best makers he would probably be justified in charging you $25 for it alone because it would take one of his best machinists, who is paid about $8 a day, about two days to make the pin and slot right.

A windgauge rear sight is an absolute essential on a .22 caliber rifle which is always used on small targets or small game. Without it you can never be sure that your point of aim and point of impact coincide. Point of impact changes slightly with every lot of ammunition you buy.

I have never heard of a roller being used on a Springfield. One is used on the Ross straight pull rifle to improve the trigger pull, but it is neither necessary nor desirable on the Springfield.

The aluminum butt plate is about the same weight as the steel one, for the aluminum is solid and the steel one hollow. The aluminum one has the prong for offhand shooting. A soft rubber recoil pad would be lighter but less durable. I would favor the regular steel butt-plate for almost everything. A rifle never can or will be made as accurate as an expert rifleman can sight it, using proper sights.

Poldi-antiCorro barrels cost about $50 each. They are much more resistant to rust, but otherwise not quite as good as the regular Springfield barrels.

BEST LOAD FOR DEER AND BLACK BEAR

I HAVE a sporting model .30 caliber Springfield rifle and am very much pleased with it. I am planning a hunting trip this fall for deer and black bear, and as there are so many different loads for the Springfield, I will thank you to recommend the best load for deer and black bear. I am rather partial to Western ammunition and have been wondering if the Western 150 grain open point bullet at 2760 foot seconds would not be a good load. How is the Remington 110 grain load for deer and small bear where the hunting will be done in thick forest?

Second inquiry. I also have an 8 mm. Mauser that I bought several years ago from one of the Army stores. This is a cheap affair without the name of a reliable maker on the action. However, it has the word "Germany" printed on the side of the receiver. I have shot this rifle about three hundred times using German soft-point ammunition. I have been able to make about 3½ inch groups with this outfit at 100 yards with about two shots out of ten being several inches high. I have never used American made ammunition in this rifle. I used this rifle until I read several articles by J. R. Mattern and Captain Crossman criticising cheap German rifles, and since that time I have been afraid to shoot it. Now, do you think this rifle is perfectly safe when using Winchester ammunition with soft-pointbullets, weight 227 grains. I have a friend who would like to borrow the rifle for a few days this fall and of course I would not let him use it unless I knew it was safe. I never had any trouble with it when using German ammunition except a few misfires. G. L. D.

Answer (by Major Whelen). Relative to the load to be used in the Springfield sporting rifle for deer and black bear, any of the cartridges containing soft point or otherwise expanding bullets weighing from 150 to 220 grains with muzzle velocities of from 2200 to 2800 f.s. are perfectly satisfactory. They all have sufficiently flat trajectory, fine accuracy, and excess killing power. However those loaded with 150 grain bullet give less recoil than the others.

I do not consider it sportsmanlike to use the 110 grain Remington Hi-Speed load on deer and black bear. Undoubtedly it will often give lightning kills on such game, and sportsmen with limited experience getting one or two kills of this kind will undoubtedly be loud in its praise from time to time. But the chance of a failure is too great, and a failure means an animal going off to die a painful and lingering death. This load, however, is a most excellent one for woodchuck, foxes, coyotes, and varmints generally and has a real value in this direction.

Of all the rifles that I know the 8 m.m. Mausers are perhaps the very worst when it comes to accuracy and reliability. This pertains very forcibly to the cheap ones imported into this country during the last five years. There seems to be no standard of either boring, rifling, chambering, or bullet size. Groove diameters vary from .318 incn to .326 inch. The lead of the chamber at the throat also varies greatly. All kinds of ammunition are made for them. They usually shoot all over the lot. On very rare occasions one may by great luck get a combination of rifle and ammunition which fit each other fairly well, and thus get results similar to those you have obtained—by no means good, but not distinctly rotten as is usually the case. The breech action of these Mauser rifles, however, is almost invariably excellent. It is a very rare thing to see a poor Mauser breech action. Even the used and converted war actions are almost always fine. The differences in standards of bore and bullet diameter almost always result in a bullet too large for the bore, so the result is that almost always there is a large margin of safety, the breech pressure being low. Therefore I should say that it was perfectly safe to lend the rifle. In fact it is just about the best thing you can do with it—keep it as a rifle to lend, for a man who borrows a rifle is never a rifleman, and will never take care of it anyhow.

THE S. S. vs. THE '52

COULD I expect to get as small groups from the .22 caliber Winchester musket as from the Model 52 Winchester? I wish to purchase a single shot and I note the N. R. A. have some in the long rifle sale. Also is the use of steel wool in the bore more harmful than a brass brush?

I read with interest your article in THE AMERICAN RIFLEMAN (May 1st) in which you described the fine shooting of your Winchester single shot No. 3 barrel.

I am now shooting a Model 52 equipped with an A-5 scope and find it very accurate, and would like to get a single shot that will shoot as well, and if the .22 Winchester musket will do this, it would suit me fine as I would alter the stock to suit.

I can't afford $100 or more for a Hoffman Ballard or a Pope. Chas. E. Caleb, San Francisco, California.

Answer (by Major Whelen). I do not believe that a given .22 caliber barrel will shoot quite as well when mounted in a Winchester Single Shot action as when the same barrel is mounted in a Winchester Model 52 action. One of the most important things in .22 caliber accuracy is ignition. The ignitions and the breeching up of the Winchester Model 52 is nearly perfect. But the breech block of the Single Shot does not close as tightly on the head of the cartridge. Moreover, on a thick headed cartridge the breech block will not rise quite as high as it does on a thin headed cartridge, and the two cartridges are struck by the firing pin in slightly different places, which many people believe accounts for the Single shot rifle being slightly inferior to the Model 52. Also with the Single Shot flange of the cartridge case on the under side is supported against the blow of the firing pin by the extractor, and not by the solid steel of the barrel, which may be another small contributor to the difference between the two models of rifles.

I understand that just before the War some experiments were made with regard to barrel vibrations, and it was found that the vibrations of the Winchester single shot rifle were not quite as constant as those of some other models. Also that it was found that the vibrations of barrels mounted in the Ballard action were the best of all the single shot rifles.

I am sorry to have to say these things about the Winchester single shot. It is my favorite single shot action. It is strong, simple, and reliable. But my experience with this action would seem to show that the above was true relative to it. However, the difference in accuracy does not amount to much. The average increase in size of groups at 100 yards over those given by the very best rifles, that can be chargeable directly to the Winchester single shot action, all other things being equal, is probably not more than a quarter of an inch.

It is mighty hard to equal or excel the accuracy of the Winchester Model 52 rifle. To do it with a single shot rifle I think that you will have to get a good Ballard action and have a special Pope or Peterson barrel attached to it.

With regard to the use of steel wool in rifle barrels. I do not believe that its occasional use to remove a slight rust will do any appreciable harm, but I do think that its habitual use in the place of a brass brush will wear out the barrel before its time. About three years ago I had occasion to cut six inches off the muzzle of a .40 caliber rifle, and it occurred to me that it would be a good idea to use this short piece of barrel to make a test of steel wool. A wad of steel wool, about one inch long, was placed between two plungers that fitted the bore, and the wad was run back and forth through the six inches of bore many times, pressing the two plungers together so as to maintain a firm pressure of the wool against the bore, and renewing the wool from time to time as it became worn out. The finest grade of steel wool was used. After 500 passages of the wool through the bore no wear at all could be noticed, but the bore had taken on a most beautiful polish. After 1,000 passages it seemed to me that the corners of the lands were getting a little rounded, and after 2,000 passages it was very evident that the corners of the lands had become quite a little rounded. The bore was then measured with a lead plug, and compared with a similar measurement made before starting the test, and as nearly as I could tell the bore had become enlarged on both lands and grooves about .0005-inch.

On the other hand I do not think that a brass brush will cause any wear at all. I have seen almost hundreds of rifles of .30 caliber that were cleaned always with brass brushes. I have seen these same rifles shot completely through their accuracy life. The accuracy life of barrels in which the brass brushes were used averaged quite as long as any other barrels firing the same cartridge, and there did not appear to be any wear in the bore that could be contributed directly to the use of the brushes.

In all my own high power rifles I use a brass brush and water always to clean with. But in .22 caliber barrels I have never used a brass brush, mainly because I never found any need of one. In cleaning a .22 caliber rifle I think if you will first push two patches wet with water or Chloroil completely through the bore once, and out the muzzle, discarding the patch when it comes out the muzzle; then swab the bore thoroughly with about two more patches wet with water or Chloroil; then dry the bore thoroughly with dry flannel patches, running them back and forth through the bore until they come out dry, with only slight discoloration from the steel, about five patches is usually enough; then thoroughly grease the bore with any good gun grease; you will have no trouble in keeping the bore clean. With the Winchester Model 52 I find it more convenient to use Chloroil than water, because either cleaner will get into the two little extractor cuts on either side of the breech of the barrel, and unless you dry all the water out of these rust will start up here. Chloroil, on the other hand will not cause rust if all of it is not dried out of these two cuts.

* * *

THAT "BUM SPRINGFIELD"

By Byron E. Cottrell

WITHOUT doubt you all read of the above referred to "Bum Springfield" the tale of which appeared in THE AMERICAN RIFLEMAN of June 15, but for the benefit of those that did not read it I will briefly state the facts. The Springfield was a Model 1922, .30 caliber and a very accurate arm. The stock was cut to a little more pleasing shape, and the forearm was fastened with a band around barrel and a screw through stock, the stock was checked and an Anti-Flinch Pad fitted to suit the butt.—The rifle shot good no more! After a lot of shooting the council of Major Whelen was sought,—also that of the Springfield Armory. It appeared that the trouble was in the manner of fastening the forearm.

Plenty of wood had been left in the forearm and it was decided to fasten it with a band around barrel and wood the same as it was when it left the armory. We used the same band, and after a lot of trouble found a man who could cut out enough metal from each side and braze it together again so that it would be a *perfect* fit to the re-shaped stock. We ran all over the country to find a man who could do this, but we finally found him—and he did a fine job, in fact it would have been impossible to have done a better one. This band was put on in exactly the same place that it originally occupied. PRESTO! The rifle shot *as well as ever*, and has continued to do so ever since. Only those that have used these rifles know how they will shoot.

ROUND BULLETS IN RIFLES

VERY much interested in the Dope Bag of THE AMERICAN RIFLEMAN, and note your remarks on the round bullet in answer to E. B. Huffman, of Columbus, Ga., in January 15 issue, so I just fired five shots in a Stevens No. 44½ .25 cal. 25-20 S. S. Inclosed is a bullet after going through four ¾-inch planed pine boards at 50 feet, 2 fired at 50 feet, 3 at 50 yards, same elevation, as at 50 feet. Shots cut each other about .40 cal. or less, elevation center, at 50 yards. 3 shots make a group 3 inch 1 one eighth inch high. Charge 4.6 grains. Infallible bullets $257.28 Ideal 26 grains. Inclosed is one of the 50 ft. bullets to show mushrooming. Bullets just pinched in bullets measured .260.

I find large charges print better than medium, also small charges print better than medium. In the .32-40 a bullet must measure .325 or about .005 in. larger than groove diameter. Any other size will follow that rule.

Ideal people tried out the Krag with a bullet .306 and warned not to use over two or three grains of du Pont No. 1, or it would jump the rifling. The original bullet was from that 5 ball mold made by Springfield. I find no stripping now leading in 5 or 10 shot groups. Bullets lubricated rim fire style outside and using a .461 bullet in an 1886 Winchester. Some punch with a full charged black fools too much, so am going to try out Smokeless. Wonder if du Pont's No. 18 would work best, as it is the various rifle smokeless small shells at head and so forth, and the shotgun powder appears to do better. No. 75 works good in a .45-90, so does Sharpshooter, but I am afraid Sharpshooter gives too much heat.

The .25-20 cases are too light to try out fully, so I have just written to Mattern if he has any better ones on sale. I also told him when it started reloading, here goes!

Time 1870, a second hand Ballard rimfire .32 cal. *Long preferred* bullets were cast from a Colt's .31 cal. revolver mould, shell full of a fine black. This rifle had an auxiliary nipple attachment for caps, change from rimfire to caps in a minute, *extractor worked by hand*. Shot very fine, better than factory rim fire's rifle made in the '60s. S. Van Rensaeller, of New York City has a .38 rim fire in stock, same model as I had.

Another thing, those old conical heel base bullets shoot very accurate; lubricate outside, mob-ilubricant or auto grease works good. Just a twist like they used to do to the .30-06 grease sheels and they resize themselves about 1880. I tried out round bullets in a Sharp Borchardt Military .45 cal. at Creedmoor. Made very fine results at 100 yards, but at 200 yards commenced to scatter; charge about 90 grain of black cleaned every 5 shots, velocity declared over 2,000 f. s. by one of the U. S. Engineer officers.

Would you kindly send me one of your pamphlets, "Loads and Reloads of American Cartridges." I have written to you before. I have had a set of Marine Corps sights through your recommend for years. I have used as a gun oil two-thirds Neatsfoot Oil, one-third Astral Oil. You thought the trace of acid in the kerosene would rust—nary a rust, even standing a week. Mixes in a few shakes. J. L. F., Staatsburg, N. Y.

Answer (by Maj. Whelen). I am very much obliged to you for the detailed information as to the use of round bullets in rifles. I have filed this in my records and it will undoubtedly be of much use to me in answering such inquiries in the future. Based on my own experience, and what I have heard from others, I should say that one would be pretty safe in adhering to the principle of a slightly oversized round bullet, for use with smokeless powder. I am rather surprised, however, that you got good results in the .45-70 sharps with a round bullet and 90 grains of black powder. I regret very much that the edition of "Cartridges and Loads" is entirely exhausted, but I will see if I cannot pick up a copy for you somewhere.

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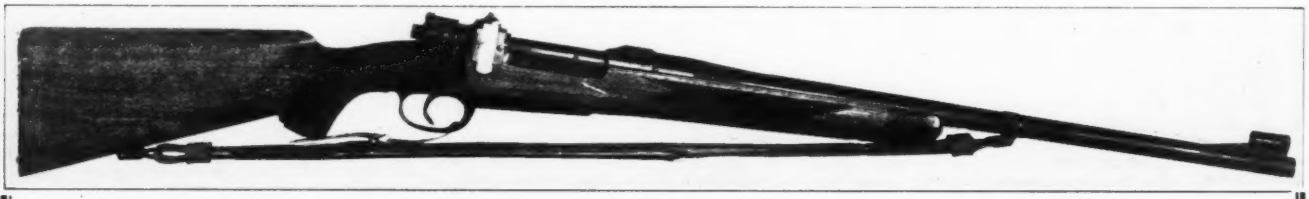

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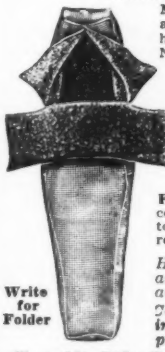

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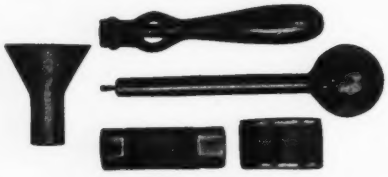

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GUN BLUING—Simple 15-minute process, not a paint, used for years, unexcelled, enough for 15 guns, $1.25. Pacific Arms Corporation, Box 427, San Francisco, Cal. Q

FOR SALE—New guns at discount to members N. R. A. Also number of used guns priced right. No list, say what you want. Member N. R. A. Earl J. Russell, Monmouth, Ill. T

CARTRIDGES—.45 Colt, not auto., $2.50 per 100, $22.00 per 1000 (absolutely perfect). 7 mm. Mauser rifle f.m.p. cartridges, discolored by water, $4.50 per 100, $40.00 per 1000. Pacific Arms Corporation, Box 427, San Francisco, California. R

TRADE—Precision AC-DC, 150-300 Volt portable meter, mahogany case, perfect for .45 Colt Auto. with holster, new condition; or .22 target rifle, perfect not under 8 lbs. Sale—Outdoor 200 yard rifle target, ball bearing, sprocket and chain, can't stick, self contained all iron, ready to set in pit, with pair of magneto call phones, $50.00. Homer A. Booth, 395 Fenn St., Pittsfield, Mass. 641

FOR SALE—Paterson Colt shotgun, LeMat revolver, Colt London Navy, 56 different priced auction sale catalogs, 50 books relating to firearms, including Sawyer's Vol. 1 and Vol. 2 "Revolver;" U. S. C. Co. Lowel collection; Simeon North "First Official Pistol Maker." Also pistols, revolvers, rifles, and carbines to sell or exchange for Colts, Winchesters or Smith & Wessons, J. C. Harvey, 872-880 Main St., Worcester, Mass. S

SELL OR TRADE—.30-06 Springfield Rifle as issued; 1917 Enfield '06, Government reconditioned; .45-70 with Sporter stock, loading tool; .30-30 Remington Auto.; .25-20 Marlin; .22 Stevens Armory with cataract scope; .22 Stevens 6-in. pistol; .45 Colt's Army; Joslin Carbine, about .50 cal. B. L., hammer missing, otherwise good. Rare relic; 12 ga. Remington Auto.; 12 ga. double hammer; 16 ga. Hammerless Ithaca, Field Grade, Jostam pad; .410 Single. Guarantee guns in good shape or money back. 2 cameras, 5x7, 6½x8½ with outfits; four tube Paragon Radio, $28.00. 2-A Westingnouse Charger $15.00. Penn. Phones, $2.00. S. R. S. Speaker $8.50. R. 3 Magnavox Power Horn, $20.00; .30-06 government loaded ammunition, 2 cents. WANT— No. 52 Winchester, No. 12 Winchester .250-3000; Hi-Power Spotting Scope; 5 power rifle scope. What? All letters answered. Member N.R.A. W. McGowan, 1905 Hillside Ave., Springfield, Ohio. 582

SALE OR TRADE—Fine muzzle loading rifle, gun caps, 50 cents per M. Primers $2.00 per M. Two fine Remington pistols, Army model, Ballard-Peterson .25-21, $20.00. Fine 10-ga. Charles Daley Hammerless Damascus barrels, circassian p g. stock. A-1 inside. Would cost today $250.00. Long range duck and goose gun. Several fine Schuetzenn Match rifles. Two watches, one South Bend 15 jewel. Hamilton 17 jewel, both good. .22 Hi-power loading tools, adjusted chamber, resizing die, 3 boxes hand loaded shells, lot of primed shells, sub .22 chamber, for .22 L.R. Will sell the lot for $5.00. One straight line .256 Newton Loading Tools; $5.60 worth of soft point cartridges, 50 primed shells, $7.00 for the lot. One mm. Mauser pre-war gun, $25. Marlin .44-40; 45-70 Springfield, $5.00. Fine Officer's Model 10 shot with German Mauser .30 caliber combination, fancy holster & stock. Some gun books, powder scales, a bushel of moulds, from 22 to 60 cal., loading tools, muzzle loading Schuetzen barrel for Ballard action, 35 auto. factory shells s.p. $1.20 box. WANT heavy side hammer set triggers, Sharps rifles, and heavy Match rifles, cap lock rifles, .22 Army model, Remington pistols. SELL—Fine Mauser action blued and same as new $10.00. Al Hinton, Hillyard, Washington. 630

WANTED—Pope machine rest. State price and condition. W. A. Tewes, Box 76, Montvale, N. J. 635

FOR SALE—Smith & Wesson .22 cal. pistol, new model, perfect condition, bargain $16.00. A. H. Sikes, Great Falls, Montana. 644

MAKE YOUR OLD GUNS LIKE NEW with New Method Gun Bluer. Easily applied with a brush. Large size can enough for five guns, postpaid for $1.00. New Method Gun Bluing Co., Box Z-12, Bradford, Pa. Z

WILD GAME, BIRDS, AND ANIMALS—Jack Rabbits $5.00 a pair, ten pairs $40.00. Cottontails $2.50 a pair, ten pairs $18.00. Fox squirrels $5.00 a pair. Possums $3.75 pair. Foxes, Coons, Skunks, etc., Bear, Deer, Karakul Fur Sheep. Possum Hollow Gamefarm, R. F. D. No. 40-A, Springfield, Ohio. W

SHIFT WITH THE HOUSE OF SHIFF THE GUNMAN, N. Woodstock, N. Hampshire. The last price list for 1925 will be out in a few weeks. Our stock is very complete and summer prices hold until October first. We are stealing second base from the fanatics. If you can read and FIGHT you will get your money's worth if you care to ship your stamp. V

FOR SALE—.35 Whelen Rifle made by Griffin and Howe, gold bead front sight, Lyman 48 micrometer rear sight, Whelen cheekpiece, Whelen sling, nicely checkered stock, nicely engraved barrel and action. In perfect condition inside and out. Trap butt plate with compartment for cleaning rod and oil can in stock. Cost $200.00 in July 1924. 120 rounds of ammunition, steel cleaning rod and oil can. Will take $150.00 for entire outfit. Shot not over 35 times. Philip R. Fox, Madison, Wis. Y

WILD GAME, BIRDS AND ANIMALS—Live decoys, guaranteed to please, Mallards, $4.50 pair, 2 pairs $8.00. Gray Caller decoys $5.00 pair, 2 pairs $9.00. Black ducks $7.50 pair, 2 pairs $14.00. All other ducks, geese, and swans. Full grown Canadian geese $17.50 pair. Prompt shipment. Money back if not satisfactory. All kinds of pheasants, partridges, quails, wild turkeys, peafowl and doves. Illustrated catalog 10 cents. Possum Hollow Game Farm, R. F. D. No. 40-B, Springfield, Ohio. X

FOR SALE OR TRADE—D.H.E. Parker ejector with two sets of interchangeable barrels in factory condition, bought last season. Stock 15¼x2⅝x14. 30-in. bbls. bored 180 pellets right and 220 left. 26-in. bbls. bored 150 right and 200 left. Cost with case holding both barrels over $275.00. Will take $200.00 cash or will tade for cheaper grade and take difference. NEW 1924 MATCH SPRINGFIELD with 1922 P. G. stock fitted at Armory with Niedner dovetailed bases and Niedner Winchester mounts and Win. 5-A scope. This rifle fired about 100 times with gilding metal bullets, will take $80.00 cash for outfit. Krag with barrel cut to 24 in. and Springfield front with gold bead fitted by Niedner. Lyman No. 34 rear, in perfect condition throughout, with lots of empties if wanted, bargain at $20.00. Krag rifle perfect except barrel pitted (not worn) with 450 R. A. 17 cartridges. Will take $15.00. COLT S. A. .45 5½ in. barrel just overhauled and reblued at factory with 50 cartridges for $20.00. 300 Win. 220 gr. bullets, $3.00 for lot. Maxim silencer for .30 Springfield, new condition, $2.50. Unopened case of .45 Auto ammunition for $29.00. WANTED—High grade spotting scope with stand. Winchester No. 53 cal. .25-20 with reloading tools. Ithaca auto. and Burglar gun. Winchester 16 ga. or 20 ga. 1912 pump either new or factory condition. Dunlap Roddey, Rock Hill, South Carolina. A

TRADE—New $60.00 cornet used three times to trade for Springfield. What have you? E. W. Brock, Denton, Texas. 642

WANTED—Ballard action or complete Ballard rifle with heavy barrel, about No. 3 size. Arthur W. Baker, 450 Colvin Ave., Buffalo, N. Y. 634

WANTED—.32-40 D. A. loading tool. Also mold. 7.62 loaded and empty. Scope and mounts. F. E. Brickel, 1213 Hall Ave., Lakewood, Ohio. 646

FOR SALE—.33-40 Stevens Pope muzzle loader, engraved ballard action, double set triggers, perfect condition, $60.00. Also .25-21 shells for sale. Darrell J. Barnes, R. R. No. 2, Eaton, Indiana. 637

FOR SALE—One Sousa grade, $700.00 list, Ithaca trap gun, slightly used, for $350.00. One double barrel, 20 ga., Damascus, single trigger, Ithaca gun, new $335.00 list, for $200.00. One double barrel, Damascus, highest grade LeFever gun, 12 ga., new, $300.00 list, $150.00 C. E. Shoemaker, c-o Shoemaker-Bale Auto Co., Little Rock, Arkansas. U

SALE OR TRADE—Colt S. A. .32-20, 7½ inch barrel, has been nickel plated. Barrel not perfect inside. Otherwise good shape, $20.00. 7mm. Mauser, prewar. Serial No. 12741. Made by Ludw. Loewe and Co., Berlin. Model 1895. Action good. Barrel used but good, bluing and stock good. Stock bad about 8 inches, cut off foreend. Very classy little gun, $35.00. WANT 52 Winchester, 9 or 10 power scope, also spotting scope. WANT loading tools, give description and price. Also want Colt .22 Auto. W. McGowan, 1906 Hillside Ave., Springfield, Ohio. 638

FOR SALE—Beautiful 1876 Model Winchester .44-40, with Circassian walnut stock, pistol grip and shot gun butt, full checked, bluing and mottled receiver, in perfect condition. Lyman ivory bead, folding leaf and No. 1-A peep sight, a perfect gun, worth $75.00—take $35.00. Colt's Navy 7½ inch octagon barrel, nickel plate in poor shape, gun in good shooting condition, $8.00 delivered. Colt's .38 cal. double action revolver 3½ inch barrel, full nickeled, in perfect condition, discontinued model, $12.50 delivered. H. N. Spencer, 1601 Railway Exchange, St. Louis, Missouri 636

WANTED—Old Gun Catalogues, Gun Books, Old Sporting Magazines, "The Rifle," "Shooting and Fishing." reloading tool and mold for .44 Evans Rifle. FOR SALE—5 ball round .30 caliber mold, fine, $2.50. Remington single shot carbine .44-40, fine $8.50. Webley .455 cal. Army model, blued, new and perfect, $15.00. Cartridges .22 ex. long, C. F., .25-25 Stephen .38 ex. long, .38-40 Remington straight, .44 Ballard, .44 long Frank Wesson. Caps for muzzle loaders $1.00 per 1,000. Reloading sets .25-20 S. S., .38-55, .40-82, .45-60, $2.50 per set. Auction sale catalogues of rare firearms. Fred Wainwright, Grayling, Michigan. 635

WANTED—Parker, Fox, or Smith double, or Remington 17 ribbed, 20 ga. or 16 ga., preferably 20, to be, if Parker GHE grade or higher; if Fox, C. E. or higher; if Smith, Specialty grade or above. To be of following dimensions: Stock 14½ to 14¾, drop at heel 2 to 2¼ inches. Right barrel to be quarter, half, or modified choke, left barrel full choke, 28 or 30 inches in length. Automatic ejectors, and possible one trigger, but not essential. Guns must be in nearly new condition or at least in perfect condition inside and free from pits in the barrels or other imperfections. Privilege of examination and targeting. State grade of gun and price expected. J. J. Wylie, 411 Pine St., Emporium, Pa. 639

WANTED—Several cases of Krag ammunition, also several thousand .45 revolver ball cartridges such as were sold by the D. C. M. Give lowest price. J. R. Ziegler, Secy., Vebster City Rifle Club, Webster City, Iowa. 632

FOR SALE—One .250-3000 Savage rifle and .410 shot barrel for same. Lyman's ivory bead front, folding middle and Lyman's No. 2-A rear sight, Ideal bullet mold, 100 empty shells and 200 gas check bullets. Outfit $40.00 fine condition. G. C. Krop, 311 Brown Ave., Turtle Creek, Pa. 654

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FOR SALE—New Springfield complete except barrel and sights, $18.00. Ballard set trigger action, $8.00. Ballard .22 l. r. 26-inch barrel, single trigger, blocks, accurate, $20.00. Sharps Borschardt, target model 30-inch barrel, new inside and out, $20.00. Another one not so good $10.00, with mold. S. & W. new Perfected s. s. $20.00. S. & W. .44 Russian Target Model, fine condition, $25.00. Colts Bisley Target Model, .44 S. & W. Russian, $30.00. Remington Army model 50 cal. pistol, new, $17.00. .31 cal. per. Colts, also 36 and 44, $9.00 each. .44 Remington per. new, $8.00. .44-90 regular, Remington Target model, new, $20.00. Colts .45, 1917, model, new $12.00. B. S. A. barrel with sight blocks front sight and fore end, new condition inside, accurate, $5.00. Fine Special Schuetzen, Remington bbl. set trigger, .32-40, mold, new inside and out, target sights, fine stock, etc. $35.00. C. B. Adkins, 1083-A Prospect Place, Brooklyn, N. Y. 643

FOR SALE—Krag single shot sporter by Hoffman, perfect, tapped for scope, $25.00. B. S. A. .22 cal. target rifle, oil finish, perfect, $35.00. Ballard .32-40, no sights, $10.00. 1897 Win. Tournament grade trap gun leather case, inside fine, outside shows use, oil finish, $50.00. 11 mm. Mauser, sporter style, fine $10.00. 2 .38 Spec. Colt O. M., 7½ in., perfect, $35.00 each. .38 Spec. S. & W. 4 in., new with spec. holster, $30.00. 380 Colt Auto., used but good. $10.00. .38 Spec. Colt P.P.S. 6 in., new, $18.00 2 Ideal Lub. $6.50 each. 2 Ideal Pow. Meas., $4.00 each. Ideal molds, $1.50 each. Nos. 308291 - 311207 - 311243 - 308291 - 429251 - 429383-358311 - 360303. Ideal dies; 429-313-308-358. Ideal Tools, No. 3-303 Savage, No. 3-30-40, No. 3-.38 S. & W. Special, $5.00. No. 4-.32 S. & W. L. $3.00. Pots, ladles, powder primers, 30 caliber gas checks, adjustable spot. scope stand. $4.00. Personal checks not accepted, amounts over $10.00, ½ with order, bal. C. O. D. subject to examination. If you don't believe you are getting your money's worth ship it back to me. Ivan Blair, Box 257, Warren, Ohio. 640

FOR SALE—Maynard .22 using 22-13-45, very good, reloading tool, mold and 150 empties, early tang sight, adjustable, $19.50; .45-70 Winchester, Model '86, in good serviceable order, $14.50. .25-20 Stevens S. S., excellent, $17.50; B.S.A. sight suitable for latter, $2.50; 1400 rounds of .25-20 S. S. blackpowder in fine condition, $1.25 per 100; .25-20 mold $1.50; .32-40 Remington Hepburn, bbl. poor, action and stock excellent, $10.00; .45-70 Sharps Borchardt "Old Reliable" in very good serviceable order, $12.50; .45-70 Remington-Lee 5 shot magazine, shortened forearm, 36 in. bbl., good condition, $12.50. 11 mm. Model 71-84, about 10 shot tubular magazine German Mauser, in fine order with 30 cartridges, $10.00. .45-70 Peabody, Henry rifling, fair, $4.75. 6.5 mm. Japanese carbine, altered to light hunter, tapped for Lyman 48, bbl. and action excellent, with 200 cartridges. $12.50. 11 mm. Spanish Remington, in very good condition, with 80 cartridges, selected rifle, $6.50. .30-40 Winchester S. S. heavy pressure bbl. Lyman 103 sight, excellent, $25.00. .22 l.r. Winchester S. S., heavy octagonal 22 in. bbl. set triggers, B-5 Winchester scope and mounts, fine order, $25.00. Model '05 Ross, fine, $7.00; .22 Krag, Stevens-Pope bbl., carbine stock, 26 in. bbl., excellent, $15.00. Ideal powder measure, $5.00. .45-70 Sharps Borchardt action, incomplete, $4.50. .45 Ideal Auto. mold, $2.00. .45 cal. 4 ball mold, brass, F. A. good, $4.00. .38-40 Winchester mold, $1.35. 8 ball Ideal 308333 gas check Armory mold, good, $4.50. Yankee .30 cal. gas check tool, complete with copper sheets, $6.50. 350 .303 British Mark VII, $3.50 per 100; .45 Colt d. a. tool with w-o mold with muzzle resizer, $5.00; .45-70-500 Ideal tool d.a. with mold, $4.25; muzzle resizer and expander for latter tool, $1.25 each; Bond .30-06 30-40 tool complete, $8.50; .45 Colt Revolver Smokeless cartridges, F. A. fine, $2.25 per 100. Transportation extra. E. D. Regad, D. O. R. D., Pedricktown, N. J. 647

HUNDRED GUNS IN STOCK—Stamp for list, trade guns with Henry F. Zinner, Middleburgh, N. Y. B

WANTED—One fixed front sight base for Krag, also a Lyman 34 sight for Krag. J. W. Harding, 157 Pine St., Pittston, Pa. 653

FOR SALE—40 power 2 in. objective Vion Telescope, $20.00. New. Oscar Anderson, R. 4, Box 97, Greenwood, Wisconsin. 660

FOR SALE—Smith & Wesson .22 Target Pistol, 10 inch barrel, perfect, price $16.00. WANT—Copy Whelen's "American Rifle" cheap, also .250-300 reload tools. E. B. Ayres, Jr., Hillsboro, Ohio. 645

FOR SALE—Rem. Model 24 Autoloading rifle, cal. .22 long rifle with special balanced forend. Marble peep sight, and metal case. WANT—Win. Model 1890 chambered for .22 short. L. O. Andrews, Route 1, Plymouth, Wisc. 651

SELL—N. M. Springfield, fired 100 times, exc. condition,; Lyman 48 rear; oiler and thong case; front and rear sight covers; sling; O'Hare mic.; cleaning rod. $40.00. F. O. B. R. O. Knudson, 87 Beach Ave., Mamaroneck, N. Y. 658

FOR SALE—Stargauged, N. M. Springfield, Pistol grip stock with military fore-end. First class condition, 100 rounds 1924 N. M. Amm., rod and cleaning funnel. Best offer takes outfit. Basil A. Fleming, Northwest Nazarene College, Nampa, Idaho. 659

WILL TRADE—Brand new Smith & Wesson .38 Special 4-inch, round butt, blued, and holster, fired 50 times, and $10.00 for new Smith & Wesson 5-inch, square butt, blued, or will sell for $25.00. Make offer. O. S. Hatrick, 259 Waverly Ave., Newark, N. J. 649

FOR SALE—Stevens .28-30 target rifle, No. 3 barrel, 30-inch, reloading tools, adj. mold, full leather case, Schuetzen butt plate, adj-trigger pull, guard perfect, same as new, peep sights, empty shells. D. H. Nelson, 312 El Marado Ct., Ontario, Calif. c

SALE OR TRADE—Colt .44-40 nickeled, 7½, gold bead sight, ivory grips. Ideal No. 3 tool and resizing die, Stevens Offhand 8 in. checkered grip. Stevens 410 double, brand new, Winchester single shot for .40-90 S. S. Dr. E. W. Harper, Watertown, South Dakota. 657

FOR SALE—One .38 Automatic Colt's Pistol, Pocket Model, brand new, never shot, cost $42.25, $27.50. One Colt's S. A. Army, cal. .32-20, 7½ in. barrel, brand new, never shot, cost $34.00, $25.00. On receipt of M. O. will pay charges and insurance. M. M. Conlon, 608 Old National Bank Bldg., Spokane, Wash. 656

FOR SALE—Winchester Model 54 bolt action .30-'06, shot twenty times, $38.00. Frogan grade 12 ga. Parker shotgun 28-inch barrel, full and modified, shot 40 times, $40.00. .38 Colt Automatic, shot 20 times, $30.00. All above in perfect condition. 2¼ x 3¼ Autograflex camera with extra roll adapter, and leather case, in perfect condition, $45.00. F. G. Dana, Hunlock Creek, Pa. 650

FOR SALE—At greatly reduced prices, six new '03 Springfield full pistol grip sporting stocks, latest design, flared grip, high comb, cheek piece, fancy walnut and checkering; $25.00 stock, $17.50; $30.00 stock, $20.00, etc. Stamp for description and price. One Kahles scope with adjustable mount for '03 Springfield, $25.00, worth $40.00; one Kahles scope with mounts for 12A Rem. .22, $20.00. One 8 mm. sporting Mauser carbine, fancy stock, $25.00. Fancy 98 Krag sporting stock, $18.00. A. J. Koshollek, Stevens Point, Wisconsin. 652

FOR SALE—LEE-SPEED bolt action Sporting rifle made by the Birmingham Small Arms Co. 6 shot cal. .303 British. Checkered pistol grip and forearm. Removable box magazine, engraved receiver and butt plate. Barrel, action and finish fine, $55.00. Colt .45 Government Automatic Pistol, $16.00. S. & W. cal. 35 Automatic Pistol, $15.00. Colt New Service cal. .44-40, 7½ in. barrel, $22.50. Mannlicher 7.65 Military Model Automatic Pistol, new condition, $25.00. Colt .32 Automatic Pistol, $14.00. Colt .22 Automatic Target Pistol, $24.00. Savage .32 cal. Automatic Pistol, $14.00. S. & W. .44 Russian Model Double Action Nickeled finish, 5-in. barrel, $17.50. Mauser (Pre-War) 8mm. Bolt Action Sporting Rifle. Checkered pistol grip and forearm. Cheek Piece. Set triggers. Fired less than 20 times, in new condition, complete with canvas case, $48.00. Remington Double Derringer $7.50. Another, with pearl stocks, $9.00. Colt .38 cal. Pocket Model Automatic Pistol, $24.50. Extra heavy percussion Match Rifle made by Wolff, Pittsburgh, cal. 50, brass trimmings, curly maple full stock, set triggers, adjustable rear sight. In beautiful condition, $20.00. Starr .44 caliber Percussion Revolver, $6.50. Collection of 100 cartridges dating from the Civil War up to the World War $7.50. W. S. Lutz, 8 So. 18th St., Philadelphia, Pa. 661

WANTED—Spotting glass. FOR SALE—Colt Officer's Model, 6 inch .38 S. & W. Been fired about twenty times, new. Price $28.00. Riley C. Sanford, Big Indian, N. Y. 678

WANTED—.30 caliber Springfield receiver and bolt. Condition of barrel not important, but receiver and bolt must be in first class condition and high serial number. W. J. Huston, 3848 Aqua Vista St., Oakland, Calif. 667

FOR SALE OR EXCHANGE—Russian Sporter Selected Walnut, hand made, checkered, close full pistol grip stock, turn down bolt handle, checkered steel butt plate, new condition. WANT Springfield or .30-'06 Mauser. F. E. Schrader, Wellsboro, Pa. 679

WILL TRADE—Brand new model 1917 Colt, .45 cal., perfect. WANT—Colt .22 target revolver, or will sell for $15.00. Also have .44 40 Colt Frontier Single Action, nickel plated, 7½ inch barrel. Excellent condition. $18.00. A. B. Gleason, 920 E St., N. W., Washington, D. C. 676

FOR SALE—.45 S. A. Colt, 5½ inch, blue. Perfect inside; practically perfect outside. $25.00. 100 empty cases and primers, $1.50. Model 1917 Colt, except for a few slight scratches on outside in perfect condition as issued, $15.00. Reference: "American Rifleman." WANT—Lyman rear sights: No. 50 for Ross; No. 103 for cocking piece; No. 48 for Krag. Laurence J. Hathaway, Ballston, Arlington Co., Va. 664

WANTED—Winchester or Ideal reloading tools, for .40-72 Winchester model 1895 rifle. Must be complete and reasonably priced. Bullet mold for regular weight bullet for standard cartridge. Krag Carbine with swivel and bar on receiver. Must be reasonably priced, for collection. Winchester rifle, single shot lever action, for .22 cal. Winchester center fire cartridge. Must be reasonably priced, with reloading tools, if possible. Geo. L. Lally, 80 Pinewoods Ave., Troy, N. Y. 655

FOR SALE—One .25-20 Savage with receiver and windgauge, large front sights. Special hand made stock, select walnut P. G., checkered and fore-end. $28.50. One .25-20 Win. S. S. 26 inch octagon barrel. Same sights and same kind of finished stock as above Savage. Price $28.50, both new condtion. Factory stock for the above Savage, $3.50. One Stevens telescope No. 368 with No. 8 mounts, bluing worn some, otherwise perfect, $15.00. Money Orders only. J. J. Donohue, Wakonda, South Dakota. 662

SALE OR TRADE—Am. Machinists Library, 10 vols.; I. C. S. Mechanical Library, 9 vols., both brand new and unsoiled, set drawing instruments, Premoette 2½ x 4¼ camera, Winchester 1894 .44-40 action good, barrel not so good. WANT—16 ga. double hammerless; S. & W. 10 inch; Springfield as issued; small caliber percussion rifle; Rem. .41 Derringer; Colt S. A. .45; single trigger, engraved Ballard action; or make offer. Actions and barrels must be in first class shape. Geo. F. Martin, 210 Mulberry St., Evansville, Ind. 663

WANTED—Muzzle-loading percussion rifle, also Kentucky Flint-lock. Both must be of small caliber and in perfect target condition. Also want Colt Derringer, perfect, and pair of Ivory grips for .45 S. A. Army. Have for sale Colt's N. S. Army .45-5½, $25.00, .38 Colt's D. A. 4½ inch Rod Ejector, $20.00, both fine. Star-gauged Springfield, no stock, $30.00, Winchester 1906 Expert Grade, $21.00. Pistol grip and nickel receiver. These rifles never fired, barrels in original grease. Ideal reloading tools, .38-40 and .44-40. G. A. Martin, 158 Wentworth St., Charleston, S. C. 681

FOR SALE—Model 1899 .303 Savage rifle. Solid frame, checkered stock and fore-end. Fitted with swivels and sling strap. Sighted with Lyman peep and special bead front sight, mounted on ramp. Bore absolutely perfect and gun in very good outside shape. Fitted also with 5-power Voigtlander telescope having four inch eye relief. The entire outfit is a pre-war outfit and the scope was made and fitted under my personal supervision in Germany. Price $75.00, including sole leather carrying case and sole leather telescope case. Outfit cost $120.00 and has been shot less than 150 times. Albert Volling, 3 Grant Place, Washington, D. C. 675

FOR SALE—Winchester .30-30 Carbine, inside perfect, outside shows some wear from handling, $20.00. Remington .35 cal. auto. rifle, sheard gold front and Marble flexible rear peep sights, inside fine, few scratches outside, $42.50. Colt Auto. .38 cal. with hammer, good used condition, $17.00. Colt .45 cal. Auto. Government Model, good used, $17.00. Colt Officer's Model Target .38 cal. S. & W. special, checkered trigger and back strap, gold front sight, shows holster wear, $27.00. Colt S. A. Frontier blued 7½ inch barrel, cal. .32-20, on .45 frame, $20.00. Colt S. A. Frontier 7½ inch barrel, some bluing rubbed off barrel, cal. 44 Russian, good condition, $20.00. G. E. Garrett, Wash. Loan and Trust Bldg., Washington, D. C. 665

THIS YEAR YOU CAN GET THEM

Bleak dawn . . whistling wind and the swish of water. . . . You crouch in the silence, tense and alert . . . suddenly the decoys grow restless and begin to call . . . then, in they come, right over your head . . . you hear the rustle of beating wings . . . but they're too high—too high at least for ordinary loads. . . .

You've been there yourself. Waited an hour. Perhaps two or more. Watched them come over *just out of range*, refuse to circle, and go on. Not even a trigger pulled. . . . *But it's a different story when you're shooting Super-X.*

This WESTERN long-range load, with its close patterns and concentrated shot string, reaches out and gets them instead of letting them pass by. Kills them cleanly 15 to 20 yards beyond the range of ordinary loads. Thousands of sportsmen are doing it. You can, too.

In shotgun shells as well as rifle and revolver cartridges WESTERN has been responsible for most of the important improvements made in recent years. Xpert, a new smokeless shell at a surprisingly low price, has already won great popular favor for ordinary all-round shooting. The WESTERN Field shell has been the standard among the world's best shots for twenty years and each year adds new records and championships to its string. *Super-X, Field, Xpert*—you, too, can do better shooting with the ammunition that is the choice of champions.

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Captain Askins has just written a new book about *Super-X* that we'll be glad to send you on request. Is there anything you want to know about your guns or ammunition? Let our technical men answer your questions.

Do you know about the many big developments which have made WESTERN the choice of the world's crack shots? *Super-X* for long range; *Xpert* for quality and low price in a smokeless shell; the *Lubaloy* bullet which prevents metal fouling in high-power rifles; the *Open-Point Expanding* bullets, for deadly killing power; the *Marksman L. R. .22* for amazing accuracy in small-bore shooting.

Literature telling all about them is yours for the asking. Always glad to hear from you.

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A masterpiece of the bookbinders' art. A tribute to the printer's craft. A permanent gift of absorbing interest to every shooter and historian. A book to revel in and be proud of. Tells the authentic story of the weapon that made this nation possible. Tells it from the inception of the idea to the present day methods of reconditioning family heirlooms and of detecting imitations of the famous old makers' weapons.

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Less Expensive — Intensely Practical

Amateur Gunsmithing — by Major Townsend Whelen has had a tremendous sale since its publication a few months ago. This is the era of special equipment when every rifle shooter is interested in fitting his stock to his own shoulder. This book covers in detail not only the work of re-stocking, re-bluing, sight fitting, etc., but takes up such other important points as repairs in the woods, etc. Sturdily bound in buckram. Splendidly illustrated. Clearly written and printed.

To Members of the N. R. A. $1.50. To Others $2.00

The regular price for these two books is $12.00. Members of the N. R. A. by using the order blank below may obtain both books until December 20 for $8.50.

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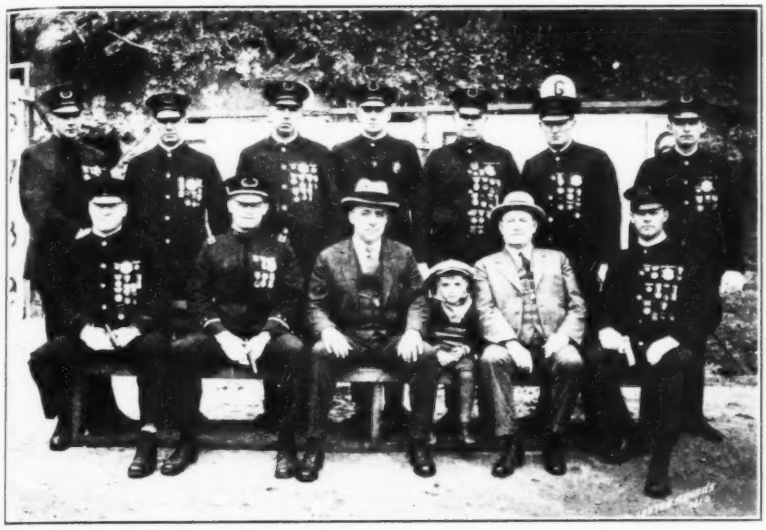
BOTH THE ABOVE AT THE CHRISTMAS GIFT PRICE OF $8.50 ( )

My remittance in the amount of $..... is attached.

Signed .....

Address .....



Seattle Police Team, Winners of 1924-1925 N.R.A. Indoor Police Team Match.

"Superior for All Classes of Firing"

This statement sums up in a few words the experiences of police organizations with U. S. cartridges. It was taken from the following letter received by us from the Seattle police whose team won first place in the 1924-1925 N. R. A. Indoor Police Team Match: "After a thorough try-out of all makes, in calibers from .22 to .45, it was decided that U. S. ammunition is superior for all classes of firing. We have used U. S. exclusively for all our matches and for practice."

The police of many cities, as well as state and private police organizations, are finding U. S. cartridges eminently satisfactory. That this is so, is borne out by the numerous testimonials received by us, several of which are printed in the column at the right.

At Camp Perry this year, no less than seventy-five per cent of all prize-winners, in the pistol and revolver matches where commercial ammunition was allowed, used U. S. cartridges. Some of the other important pistol and revolver matches this year in which U. S. cartridges figured prominently are listed below:

N. R. A. INDOOR MATCHES

Police Pistol Team Match

1st Seattle Police	2578
2nd Delaware & Hudson R.R. Police	2569

Police Pistol Championship Match

(First 15 places won with US Cartridges.)

1st G. W. Perry, Seattle, Wash.	529
2nd S. J. Jorgenson, Seattle, Wash.	520
3rd M. C. Short, Seattle, Wash.	515

Free Pistol Match

1st E. Johnson, Cleveland, O.	562
2nd C. R. Burdette, Baltimore	544

NORTHWESTERN INTERNATIONAL MATCHES

Team Match

1st Seattle Police Team	1434

U. S. REVOLVER ASSOCIATION MATCHES

20-Yard Team Match

1st Springfield Rifle & Revolver Club	1214

(In making this score, team broke world's record it shot in 1924 also with U.S. ammunition.)

Tyro Slow-Fire Pistol Match

1st J. W. Aitkens, Nekoma, Okla.	393
3rd J. L. Wiggins, Luther, Okla.	385

Tyro Timed-Fire Pistol Match

1st W. F. Coultas, Iowa City, Ia.	382

20-Yard Individual Match

1st C. A. Price, Springfield Club	248

(Mr. Price broke world's record of his team-mate Dr. I. R. Calkins, which also was established with US ammunition.)

UNITED STATES CARTRIDGE COMPANY

111 Broadway **New York, N. Y.**

What Police Say About US Ammunition

Prefer US to Any Other

"Pistol Teams of this department use and prefer U.S. 38 S. & W. Special to any other ammunition."—*Jens. K. Jensen, Chief of Delaware & Hudson R. R. Police.*

Uniform and Powerful

"I wish to take this opportunity to thank you for the special pains that you took to expedite the various orders of ammunition which our bureau used the past season. And I want to compliment you on the accuracy and reliability of your .38 Special Revolver ammunition. After using 400,000 rounds of this ammunition we found same to be uniform, accurate, and powerful."—*Harry Edwards, Lieutenant and Drillmaster, Bureau of Police, Philadelphia, Pa.*

Satisfactory in All Respects

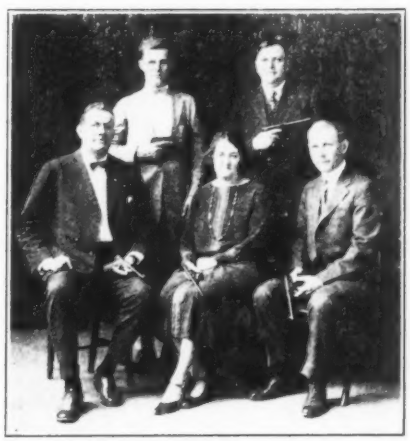
"It gives me great pleasure to recommend your ammunition. Our department has used many thousand rounds of same in revolver practice. It has always given satisfaction in every respect. We also used it in pistol team matches at Camp Perry, Ohio."—*Lieut. J. P. Downs, Police Department, Baltimore, Md.*

Accurate and Reliable

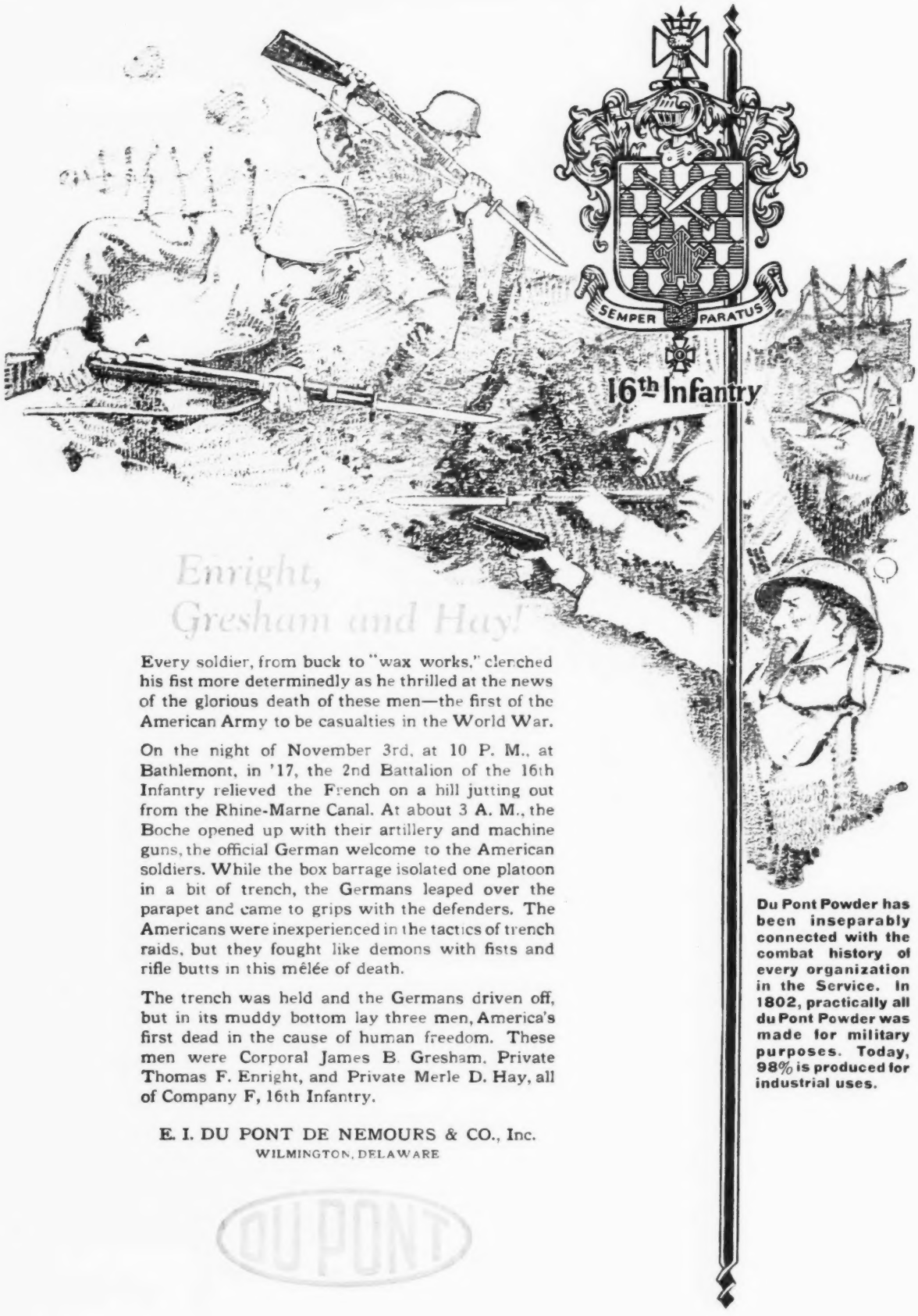
"This department has been using the United States Cartridge Company's ammunition during the past three years. We have found it accurate and reliable—both of which qualities are absolutely essential in ammunition used by police officers.—*Lynn G. Adams, Supt., Pennsylvania State Police.*

Dependable and Satisfactory

"Permit me to take this occasion to commend you on the excellent results that we have had with United States Cartridge Company's ammunition. We have found it most dependable and satisfactory. During the target season just passed, Trooper Schwartz of this organization established a new record (average of 97.14 %) over the Regular Army Course with your ammunition. Knowing that this must prove gratifying to you, it affords me additional pleasure of being able to bring it to your attention."—*H. Norman Schwarzkopf, Col. and Supt. New Jersey State Police.*



Delaware & Hudson R. R. Police Team, Winners of Second Place, 1924-1925 N.R.A. Indoor Police Team Match.



Enright,
Gresham and Hay!

Every soldier, from buck to "wax works," clenched his fist more determinedly as he thrilled at the news of the glorious death of these men—the first of the American Army to be casualties in the World War.

On the night of November 3rd, at 10 P. M., at Bathlemont, in '17, the 2nd Battalion of the 16th Infantry relieved the French on a hill jutting out from the Rhine-Marne Canal. At about 3 A. M., the Boche opened up with their artillery and machine guns, the official German welcome to the American soldiers. While the box barrage isolated one platoon in a bit of trench, the Germans leaped over the parapet and came to grips with the defenders. The Americans were inexperienced in the tactics of trench raids, but they fought like demons with fists and rifle butts in this mêlée of death.

The trench was held and the Germans driven off, but in its muddy bottom lay three men, America's first dead in the cause of human freedom. These men were Corporal James B. Gresham, Private Thomas F. Enright, and Private Merle D. Hay, all of Company F, 16th Infantry.

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